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TECHNICAL TRANSLATIONS

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TECHNICAL TRANSLATIONS

U.S. DEPARTMENT OF COMMERCE
Luther H. Hodges, *Secretary*

OFFICE OF TECHNICAL SERVICES

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TECHNICAL TRANSLATIONS

Volume 10, Number 4 Pages 363 - 473 August 30, 1963

*Descriptors marked with an asterisk are included in the subject index.

BIBLIOGRAPHY

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 207 (GENERAL SERIES). 11 June 63, 11p. JPRS: 19653.
Order from OTS $0.50 63-31032

Abstract trans. of Akademie der Wissenschaften, Berlin. Monatsberichte (East Germany) 1963, v. 5, no. 4, p. 213-276.

DESCRIPTORS: *Abstracts, Bibliographies, *Spectroscopy, Hydrodynamics, Ecology, Microbiology, Crystals, Biochemistry, Astronomy, Plasma physics, Molecular structure, *Solid state physics, Electronics, Polymers, Lasers, Seismic waves, Veterinary medicine.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 209 (GENERAL SERIES). 11 June 63, 25p. JPRS: 19656.
Order from OTS $0.75 63-31034

Consists of abstracts of articles from selected scientific and technical journals of Rumania.

DESCRIPTORS: *Abstracts, Bibliographies, Transportation, *Mathematics, *Electronics, *Biology, Animals, *Plants (Botany), Chemical engineering, *Metallurgy, Machines, Space flight, Proteins, Sleep, Fuels, Geology, Agriculture, Navy, Astrophysics, Helicopters, Polymers, Photography.

MICROMETEOROLOGY, AEROSOLS, AND AIR POLLUTION: BIBLIOGRAPHY. 25 Apr 63 [16]p. 108 refs. AID rept. B-63-50. AD-403 864
Order from OTS or SLA $1.60 63-19353

DESCRIPTORS: *Bibliographies, *Micrometeorology, *Aerosols, *Atmospheric pollution, Meteorology.

This bibliography is based on Soviet and Soviet-bloc open-source materials available at the Aerospace Information Division and the Library of Congress. The bibliography is divided into two parts: Part I. Micrometeorology and Part II. Aerosols and Air Pollution. Titles of monographs are given in transliterated form, followed by the English translation. Library of Congress call numbers are included at the end of an entry when the item is cataloged and available in the collections of the Library. The 108 entries are arranged alphabetically by author. An author index is provided. (AID note)

Library of Congress, Washington, D. C.
MONTHLY INDEX OF RUSSIAN ACCESSIONS. July 63, 325p.
Order from GPO $12.00/year

This index is a record of the publications in languages spoken in the Soviet Union currently received by the Library of Congress and a group of cooperating libraries. It consists of three parts: Part A lists monographic literature published after 1944, with the title in the original language preceded by its English translation; Part B lists periodicals published after 1946; Part C constitutes a subject guide to both the monographs and periodical articles listed in Parts A and B.

AGRICULTURE

USSR INDUSTRIAL DEVELOPMENT: SOVIET TRACTORS AND AGRICULTURAL MACHINERY NO. 70. 18 June 63, 21p. JPRS: 19730.
Order from OTS $0.75 63-31068

Trans. of 15 selected articles from Mar-May 63 issues of 11 Russian newspapers.

DESCRIPTORS: *Industrial production, *Tractors, *Agricultural machinery, *Industrial procurement, Maintenance, Iron, *Casting, Industrial plants, *Towing vehicles, *Trailers, Cotton, Wood, Logistics.

Contents:
Lack of parts for production of Taganrog self-propelled chassis, by P. Ashikhman and others
Reduction of tractor testing periods, by I. Kostenko and V. Mikheev
Lack of spare parts for T-75 and T-74 tractors
New castiron casting shop at the Minsk tractor plant
T-125 truck tractors ready for further state tests
Universal mounted Kun-10 sweep rake
Reconstruction difficulties at the Kirov plant, by A. Sidorov
New agricultural equipment and enterprises
Difficulties in production of piano-cutter, by G. Kulagin
Gomal' plant builds its 200,000th combine
New agricultural machines undergoing tests, by N. Osadchenko
Difficulties with imanta-42M truck trailer, by V. Tyurin
Spare parts shortage in Tatariya, by B. Ajtov
New cotton picking machines, by B. Zhidovtsev
Floating timber cutting combine, by V. Zanozin.

USSR INDUSTRIAL DEVELOPMENT: SOVIET TRACTORS AND AGRICULTURAL MACHINERY NO. 71. 18 June 63, 74p. JPRS: 19736.
Order from OTS $2.00 63-31071

Trans. of Mashinostroitel' (USSR) 1963, no. 3, p. 41; Sovetskie Profsoyuzy (USSR) 1963, no. 5, p. 19; and 36 selected articles from Mar 63 issues of 16 Russian newspapers.

DESCRIPTORS: *Industrial production, *Tractors, *Agricultural machinery, Industrial plants, Storage, *Logistics, *Cargo vehicles, *Trailers, Air-intake filters, Internal combustion engines.

Contents:
Production of agricultural equipment at the Kirovograd Krasnaya Zvezda plant
The Cheboksar tractor spare parts plant
Valuable equipment is stored in the open air at the Kirov plant
Criticism of the Borisovo motor vehicle and tractor electric equipment plant
Criticism of the supply of scrap metal to the Samarkand krasnyi dvigatel' plant
Supply difficulties at the Kirovograd Krasnaya Zvezda plant
Criticism of the Vladimir tractor building plant
A Socialist commitment for increasing the production of tractors and agricultural machines
The K-700 Kirovets tractor
Towards improving the quality of MTZ-50PL Belarus' tractors
Production of DT-75 tractors
Tractor production at the Onega tractor plant
The T-5 tractor
A tractor without gears
The T-125 tractor/prime-mover
Tea harvesting tractors
Self-propelled chassis
The BELAZ-548 dump-truck

A giant dump trailer
Gomsel'mash silage combine-harvesters
The new KRKh-4 cultivator
The Kazakhsel'mash plant is being let down
The RSM-10 combine
The SK-3 and SK-4 self-propelled combines
New machinery for kolkhoz fields
Machines for best growers
Machinery for the farm
A new pile forming machine
Voronezhsel'mash grain cleaning machinery
The SShR-0.5B hay stacker
Agricultural workers ask for more new machinery
Proposed specialization in hydrocylinder production at the Rigasel'mash plant
Lag in introduction of modern grain dryers in Tselinnyi Krai
New airfilter for D-37-M tractor engine and the Ts-65 large capacity poultry incubator
Lack of necessary hydraulic mounts for S-100 tractors
Delays in the development of grain picker
Progress at the Lyubertsy machine building plant
New modern equipment for kolkhozes and sovkhozes.

Globus, A. M.
DE L'UTILISATION DES COMPLEXES RADIO-ACTIFS EN MATIERE DE MARQUAGE DE L'EAU POUR LES ÉTUDES AGRO-HYDROLOGIQUES [Using Radioactive Tracers in Soil Hydrobiological Studies] tr. by L. Lasnier-Lachaise. 30 Aug 62 [18]p. 5 refs. CEA Trans. no. R 1661.
Order from OTS or SLA $1.60 63-15494

Trans. in French of #Pochvovedenie (USSR) 1961, no. 9, p. 105-110.

DESCRIPTORS: *Tracer studies, *Soils, Water, Agriculture, *Hydrology, Labelled substances, *Complex compounds, Radioactive isotopes.

Hirota, Yukiyoshi, Sumi, Hirotsugu, and Oda, Hiroshi.
FUNGICIDE AGAINST "MONGARE" DISEASE OF RICE. July 63, 6p.
Order from SA $16.00 SA Code-P-81

Trans. of [published] Japanese patent 8000/1962, cl. 30-F-373 (30-F-91) filed 25 July 59, appl. 23969/1959, pub. 11 July 62, by Sankyo Co.

DESCRIPTORS: *Fungicides, Phenyl radicals, Propyl radicals, *Arsines, Octanes, Hexanes, Xanthic acids, Sprays, Powders, *Rice, Fungus infections.

Siebeneicher, Heinz.
THE MOST IMPORTANT INNOVATIONS IN THE FIELD OF THE INORGANIC-CHEMICAL INDUSTRY: THE INDUSTRY OF PHOSPHORIC ACID AND PHOSPHATE FERTILIZERS. [1963] 45p. refs.
Order from SLA $4.60 63-16225

Trans. of Angewandte Chemie (West Germany) 1933, v. 46, no. 38, p. 596-610.

DESCRIPTORS: *Fertilizers, *Phosphoric acid, *Phosphates, Phosphorus, Industrial production.

An economic survey of the fertilizer industry, phosphorus, phosphoric acid and salts of phosphoric acid, phosphoric-acid-containing fertilizers and mixed fertilizers. (Author)

Sugimoto, Tomizo and Yumiba, Shinzo.
PROCESS OF MANUFACTURING MOISTURE-PROOF CALCIUM NITRATE FERTILIZER. July 63, 4p.
Order from SA $16.00 SA Code-P-54

Trans. of Japanese patent 177,371, cl. 4-D-132, appl. no. 7787/1946, 23 Dec 46, [published] pat. 613/1948, 15 June 48, issued 21 Dec 49, by Kyoichi Furuno.

DESCRIPTORS: *Fertilizers, Manufacturing methods, *Calcium compounds, *Nitrates, Moistureproofing, *Desiccants, Carbon, Carbonates.

Welress, Horst and Pilau, Ernst Albrecht.
EXTERMINATOR. 5 July 63, 7p
Order from SA $16.00 SA Code-P89

Trans. of published Japanese patent 6848/1962, cl. 30-F-371.1 (30-F-922) appl. no. 10,017/1959, 28 Mar 59, pub. 2 July 62 (Priority: Germany, 29 Mar 58) by Scheeling AG, Germany.

DESCRIPTORS: *Pesticides, Methyl radicals, *Thiourea derivatives, *Sulfides, Manufacturing methods, *Nematodes, Pest control, Plants (Botany), Soils, Sprays.

Plant Cultivation

Gericke, S. and Kurmies, B.
FLUORINE CONTENT AND FLUORINE ABSORPTION OF CULTIVATED PLANTS. [1963] 22p. 6 refs.
Order from SLA $2.60 63-14628

Trans. of Phosphorsäure (West Germany) 1955, v. 15 p. 50-63.
Another trans. is available from K-H $27.50 as K-H-3424 a [1962] 22p.

DESCRIPTORS: *Plants, *Fluorine, Absorption.

Lundblad, Karl.
MICROELEMENTS AND DEFICIENCY DISEASES OF CULTIVATED PLANTS. [1963] 21p. 84 refs.
Order from SLA $2.60 63-14581

Partial trans. of K. Lantbruksakademien. Tidskrift (Sweden) 1945, v. 84, p. 435-489.

DESCRIPTORS: *Plants (Botany), Vegetables, *Deficiency diseases, Nutrition, Chemical elements, Chemical analysis.

Lundblad, Karl.
PHOSPHATE FERTILIZATION OF MARSH SOILS. 26 Apr 55 [5]p.
Order from SLA $1.10 63-14623

Trans. of Phosphorsäure (West Germany) 1955, v. 15, p. 47-49.

DESCRIPTORS: *Phosphates, *Fertilizers, *Swamps, Soils, Nitrogen, Plants (Botany).

Riedel, F.
THE UTILIZATION OF BLAST FURNACE WASTE GASES FOR CARBON DIOXIDE FERTILIZATION. [1963] 25p. (figs. omitted) 3 refs.
Order from SLA $2.60 63-16076

Trans. of Stahl und Eisen (Germany) 1919, v. 39, no. 49, p. 1497-1506.

DESCRIPTORS: *Waste gases, Blast furnaces, *Carbon compounds, *Dioxides, *Fertilizers.

Svanberg, O. and Ekman, P.
ANALYSIS OF SOIL AND MANURE AND REQUIREMENTS IN MAGNESIUM FERTILIZERS. [1963] 7p. 3 refs.
Order from SLA $1.10 63-16054

Trans. of [Academie d'Agriculture de France. Comptes Rendus des Seances, 1952, v. 39, p. 548-552.

DESCRIPTORS: *Fertilizers, *Magnesium, Soils, Agriculture, Chemical analysis.

ASTRONOMY

SOVIET-BLOC RESEARCH IN GEOPHYSICS. ASTRONOMY, AND SPACE, NO. 62. 27 June 63, 15p. JPRS: 19902.
Order from OTS $16.00/year 61-11147-62
foreign $20.00/year

DESCRIPTORS: *Geophysics, *Astronomy, *Astronautics, *Upper atmosphere, *Space probes, *Astrophysics, Meteorology.

Consists of news items and abstracts of scientific articles on astronomy, meteorology, terrestrial geophysics, upper stmosphere and space research, and other miscellaneous subjects.

TRANSACTIONS OF THE CONGRESS OF THE ALL-UNION ASTRONOMIC-GEODETIC SOCIETY (NO. 3) 6-11 APR 60: [SELECTED ARTICLES]. [1963] [128]p. 40 refs. ACIC TC-591.
Order from OTS or SLA $10.10 63-19537

Trans. of mono. Trudy Tret'ego S"yesda Vsesoyuznógo Astronomo-Geodezicheskogo Obshchestva, Moscow, 1962, p. 83-104, 107-118, 136-156.

DESCRIPTORS: *Scientific organizations, *Astronomical geodesics, *Geodesics, *Moon, Position finding, *Stars, Stellar map matching, Scientific research, *Astronomy, Instrumentation, Construction, *Solar spectrum, *Telescopes, *Comets, *Solar systems, *Venus, *Relativity theory, *Space flight, *Conferences.

Contents:
Use of lunar observations for geodetic purposes, by A. A. Yakovkin
The new fundamental systems of the stellar positions, by M. S. Zverov
New methods of research in astronomy and new means of astronomic instrument construction, by O. A. Mel'nikov
The problems about comets, and the solar system, by S. K. Vsekhsvyatskii
Nature of the planet Venus, by D. Ya. Martynov.
Relativity effects in time of interstellar flights, by I. D. Novikov.

Arnol'd, V. I.
ON THE CLASSICAL THEORY OF PERTURBATIONS IN THE STABILITY PROBLEMS OF PLANETARY SYSTEMS. Jan 63, 10p. 16 refs.
Order from OTS or SLA $1.10 63-14414

Trans. of Akademiya Nauk SSSR. Doklady, 1962, v. 145, no. 3, p. 487-490.

DESCRIPTORS: *Perturbation theory, Stability, *Planets, *Solar systems, Motion, Equations, N-body problem, *Celestial mechanics.

The perturbation theory permits the prediction of the motion of the planets many years in advance and with all necessary accuracy. However, the qualitative questions on the behavior of the system during an infinitely large interval of time, for example, the question on the stability could not be solved by the perturbation theory. (Author)

Bottlinger, K. F.
THE ROTATION OF THE MILKY WAY. [1963] 35p. (figs. omitted).
Order from SLA $3.60 63-14903

Trans. of Ergebnisse der Exakten Naturwissenschaften (Germany) 1932, v. 11, p. 31ff.

DESCRIPTORS: *Stars, *Galaxies, Motion, Rotation, Velocity, Distribution, Sun, Position finding, *Statistical analysis, Astronomy, Theory, *Celestial mechanics

Masevich, A. G.
A TRIP OF SOVIET ASTRONOMERS TO THE U.S.A. [1963] 3p.
Order from OTS or SLA $1.10 63-14912

Trans. of [Astronomicheskii Tsirkulyar] (USSR) 1957, no. 184, p. 24-26.

DESCRIPTORS: *Scientific personnel, *Astronomy, *Conferences, Collaboration.

Astrophysics

LIGHT SCATTERING AND PHOTOMETRIC RELIEF OF THE LUNAR SURFACE: SELECTED ARTICLES, tr. by Nickolai Charczenko. Sep 62, 17p. 15 refs. NASA TT F-75; N63-15123.
Order from OTS $0.50 63-11639

Trans. of Astronomicheskii Tsirkulyar (USSR) 1955, no. 156, p. 19-21; Astronomicheskii Zhurnal (USSR) 1956, v. 33, no. 1, p. 93-100.

DESCRIPTORS: *Moon, *Light, *Scattering, Optical properties, Brightness, Photometers, Measurement, Astrophysics, Solar radiation, Extraterrestrial topography.

Tables and polar diagrams are given for the reflectances of the lunar maria and continents for solar radiation as functions of the angles of incidence and reflection, both measured in the same plane. The data are based on the photographic studies of V. A. Fedorets and on the visual studies of V. V. Sharonov. Some discussion of the possible nature of the lunar surface that would correspond to such reflectance characteristics is included. (Author)

SOVIET-BLOC RESEARCH IN GEOPHYSICS, ASTRONOMY, AND SPACE, NO. 61. 20 June 63, 39p. JPRS: 19763.
Order from OTS $16.00/year 61-11147-61
foreign $20.00/year

DESCRIPTORS: *Geophysics, *Astronomy, *Astronautics, *Upper atmosphere, *Space probes, *Astrophysics, Oceanology, Meteorology.

Consists of news items and abstracts of scientific articles on astronomy, meteorology, oceanography, terrestrial geophysics, upper atmosphere and space research, and other miscellaneous subjects.

Akkuratova, T.
GIGANTIC RADIO EYE. 28 Mar 63 [5]p. FTD-TT-63-110. AD-402 586.
Order from OTS or SLA $1.10 63-19345

Unedited rough draft trans. from Trud [Moscow] (USSR) 1962, 8 Dec, p. 4.

DESCRIPTORS: Radio astronomy, *Telescopes, Construction.

A popularized account concerning an 80,000 square meter radio telescope under construction in central Russia.

Alekseev, V. M.
ON ONE PROBLEM WITH A SMALL PARAMETER. [1962] [19]p. 6 refs.
Order from OTS or SLA $1.60 63-10728

Trans. of Moscow U. Vestnik. [Seriya 1: Matematika, Mekhanika] (USSR) 1962 [v. 17] no. 4, p. 17-27.

DESCRIPTORS: *N-body problem, *Celestial mechanic *Differential equations, Functions, Inequalities, Mathematical analysis.

A system of ordinary differential equations is considered. Its solutions tend to discontinuous functions if the small parameter approaches zero. This result is applied to the problem of three bodies in celestial mechanics. (Author)

Ambartsumyan, V. A.
DENSE CLOUDS OF RELATIVISTIC ELECTRONS. [1963] [8]p.
Order from OTS or SLA $1.10 63-14703

Trans. of mono. Non-Stable Stars (symposium [at] Byurakan, 20-22 Sep 56) pub. by Akademiya Nauk Armyanskoi SSR, p. 64-69.

DESCRIPTORS: Stars, *Nebulae, Condensation, *Electrons, Clouds, Electron density, Energy, Reduction, *Bremsstrahlung, Magnetic fields, *Photons, Scattering.

Ambartsumyan, V. A. and Shakhbazyan, R. K.
MULTIPLE GALAXIES AND RADIOGALAXIES. REPT. 2. FAINT BLUE TAILS AND SATELLITES OF THE ELLIPTICAL GALAXIES. [1963] 13p. 6 refs.
Order from OTS or SLA $1.60 63-14900

Trans. of [Akademiya Nauk Armyanskoi SSR, Erevan. Doklady] 1957, v. 25, no. 4 [p. 185-192].

DESCRIPTORS: *Galaxies, *Satellites, Optical properties, Continuous spectrum, Brightness, Colors, Spectrographic analysis, Astrophysics.

Biermann, L.
COMET TAILS AND SOLAR CORPUSCULAR RAYS. [1963] 20p. (refs. omitted) 3 refs.
Order from SLA $1.60 63-14697

Trans. of Zeitschrift für Astrophysik (West Germany) 1951, v. 29, p. 274-286.
Another trans. is available from SLA mi$2.70, ph$4.80 as 61-10667, 21p.

DESCRIPTORS: *Comets, *Solar radiation, Sun, Ions, Electrons, Magnetic storms, Astrophysics, Solar flares

Bruzek, Anton and Becker, U.
ABOUT ERUPTION-LIKE FLARES IN FILAMENT RISES [AND] THE FILAMENT RISE OF AUGUST 9, 1956. [1963] 21p. (2 figs. omitted) 10 refs.
Order from SLA $2.60 63-14898

Trans. of [Zeitschrift für Astrophysik] (West Germany) 1957, v. 42, no. 2, p. 76-86.

DESCRIPTORS: *Solar flares, Solar disturbances, Filaments, Optical properties, Physical properties, Astrophysics, Photographic analysis

Khachikian, E. E.
A POLARIMETRIC STUDY OF THE COMETARY NEBULA NGC 2261. [1963] 7p. (figs. omitted) 13 refs.
Order from OTS or SLA $1.10 63-14908

Trans. of Byurakanskaya Observatoriya. Soobshcheniya (USSR) 1958, v. 25, p. 67-73.

DESCRIPTORS: *Nebulae, Interstellar matter, *Polarization, Colorimetry, Optical analysis, Astrophysics.

Kholopov, P. N.
THE VARIABILITY OF BRIGHTNESS OF DWARF STARS WITH EMISSION LINES IN THEIR SPECTRA, AND SEVERAL PROPERTIES OF T-ASSOCIATIONS [O Peremennosti Bleska Zvezd-Karlikov s Emissionnymi Liniiami v Spektrakh i o Nekotorykh Osobennostiakh T-Assotsiatsii]. [1963] [36]p. (figs. tables refs. omitted).
Order from OTS or SLA $3.60 63-14909

Trans. of Peremennye Zvezdy (USSR) 1951, v. 8 [no. 2] p. 83-120.
Another trans. is available from SLA as RT-3986, 60p.

DESCRIPTORS: *Stars, *Brightness, Optical properties, Spectrographic analysis, Astrophysics, *Variable stars

Kippenhahn, R. and Schlüter, A.
A THEORY OF SOLAR FILAMENTS. [1963] [53]p. 9 refs.
Order from SLA $5.60 63-14888

Trans. of [Zeitschrift für Astrophysik] (West Germany) 1957, v. 43 [no. 1] p. 36-62.

DESCRIPTORS: *Solar corona, Magnetic fields, Gravity, Electric currents, Gases, Pressure, Stability, Equations, Astrophysics, Theory, *Solar flares.

A theory of the stationary support of solar filaments (prominences) by the magnetic field of field patches is proposed. Only at those places where the magnetic field is horizontal a filament can be supported. In addition conditions of stability have to be fullfilled. Some simple two-dimensional models of the kind are considered, and necessary stability conditions corresponding to a lateral displacement of the filament as a whole are derived. The theoretically derived structure and density of the filaments is found in

satisfactory agreement with observations, only the thickness resulting being smaller than the usually quoted value, which, however, represents only an upper limit. Some remarks are made concerning a theory of the sudden disappearances ("catapult-theory") and the theory is compared with the theory of corpuscular emission ("melon seed theory") proposed earlier. (Author)

Kourganoff, V.
OBSERVATIONS REVEALING PROCESS OF NUCLEAR DISINTEGRATION IN CERTAIN STARS. [1963] [39]p. 48 refs.
Order from SLA $3.60 63-14695

Trans. of Nuovo Cimento (Italy) 1955, ser. 10, v. 1, no. 4, p. 273-294.

DESCRIPTORS: *Stars, *Radioactive decay, *Thermonuclear reactions, Sources, Thermionic emission, Comets, Nebulae, Astrophysics, *Interstellar matter, Fission

Contents:
Critique of the explanation of the expenditure of stellar energy by thermonuclear reactions
Possibility of a method based on observations
The most significant observations concerning the problem of the sources of stellar energy
Peculiarities of continuous emission in certain stars
Variability of comet-like nebulae
Observation of comet-like nebulae in diffuse bright nebulae
Herbig-Haro objects
Nuclear disintegrations in the external layers of stars
Discrete nature of the ejection and liberation of intra-stellar energy

Kozyrev, N. A.
VOLCANOES ON VENUS. 29 Mar 63 [4]p.
FTD-TT-63-305. AD-402 594.
Order from OTS or SLA $1.10 63-19314

Unedited rough draft trans. from Zarva Vostoka (USSR) 1962, 18 Dec, p. 4.

DESCRIPTORS: *Volcanoes, *Venus, Absorption spectrum, Spectrographic analysis, Planets.

A report on a scientific expedition into a region of active volcanoes, the results of which have thrown light upon volcanic activity on Venus. (Author)

Markaryan, B. E.
THE DOUBLE GALAXY M 51. [1963] 18p. (figs. tables omitted).
Order from OTS or SLA $1.60 63-14910

Trans. of Byurakanskaya Observatoriya. Soobshcheniya (USSR) 1958, v. 25, p. 15-32.

DESCRIPTORS: *Galaxies, Solar systems, Brightness, Colors, Photographic analysis, *Colorimetry, Astrophysics.

The paper is devoted to results of a colorimetric investigation of the components of the M 51 system and the problem of the nature of the connection between them. (Author)

Martinov, D. Ya.
THE RADIUS OF VENUS [PT. 2]. [1963] [13]p. 12 refs.
Order from OTS or SLA $1.60 63-14428

Trans. of #Astronomicheskii Zhurnal (USSR) 1962, v. 39, no. 4, p. 653-659.

DESCRIPTORS: *Venus, Geometric forms, Sizing, *Planets, Optical phenomena, Astronomical data, Temperature, Cloud cover, Diurnal variations, Least squares method, Measurement, Astrophysics.

A new determination of the radius of Venus was made using occultations of Regulus and including previously unknown observations. Auwers' value of the radius 8".41 = 6100 ± 30 km received full confirmation. Possible corrections to this value are given in table 3 (the factor 0.6 should be applied). In conclusion remarks are made on the possibility of gaps in the cloud layer of the planet and the diurnal variations of the height of this layer. (Author)

Martynov, D. Ya.
CONSIDERATIONS ABOUT THE POST-WAR MANAGEMENT OF ASTROPHYSICS IN SOVIET RUSSIA. [1963] 5p.
Order from OTS or SLA $1.10 63-14911

Trans. of Astr[onomicheskii Tsirkulyar] (USSR) 1943, no. 20, p. 5-7.

DESCRIPTORS: *Research program administration, *Astrophysics, Astronomical observatories, Construction, Scientific personnel, Education.

Marx, Gyorgy.
NEUTRINO ASTRONOMY. 9 Apr 63 [19]p. JPRS:18605.
Order from OTS $0.50 63-21534

Trans. of Fizikai Szemle (Hungary) 1963, v. 13, no. 1, p. 13-20.

DESCRIPTORS: *Astronomy, *Neutrinos, *Hungary, Earth, Sun, Stars, Supernovae, Nuclear particles, Sources, Elementary particles.

The merits of neutrino radiation as a possible source of precise information concerning outer space are compared with those of the present day optical and radio astronomy. Neutrino radiation was found to supercede every radiation reaching earth but light, and, unlike Cosmic radiation, is not affected severely by Cosmic magnetic fields. On the other hand, neutrino radiation is, in the case of regular radioactive products, far below the present means of detection. Neutrino radiation produced in the central part of the sun offers an immense possibility for the study of the sun, in that it is able (contrary to the radiation of light) to emerge undisturbed, to bring a genuine picture of the conditions prevailing in the center. This allows the possibility of taking an X-ray picture of astronomical size of the sun's interior, or so to speak inserting a direct thermometer into it.

Merman, G. A.
THE ALMOST-PERIODIC SOLUTIONS AND THE DIVERGENCE OF THE LINDSTEDT SERIES IN THE PLANE RESTRICTED THREE-BODY PROBLEM. CHAP. I. THE PROOF FOR THE EXISTENCE OF THE SYMMETRIC PERIODIC ORBITS. Jan 62 [97]p. (refs. in chap. 2).
Order from OTS or SLA $8.60 63-14442

Trans. from Akademiya Nauk SSSR. Institut Teoreticheskoi Astronomii. Trudy, 1961, v. 8.

DESCRIPTORS: *N-body problem, Celestial mechanics, Orbital trajectories, Periodic variations, Fourier analysis, *Series, Functions.

Contents:
The almost-periodic solutions
The series of Lindstedt
The series of Birkhoff
The conditions for the existence of symmetric periodic orbits
The limiting case $\mu=0$
The analytical extension of cyclic solutions for $\mu \neq 0$
Birkhoff's ring
The ring transformation into itself
The classification of the symmetrical periodic solutions in the sense of Birkhoff and the proof of the existence of the periodic orbits of Schwarzschild.

Molchanov, A. P.
A METHOD FOR MEASURING THE CURRENTS OF RADIO-EMISSION FROM THE MOON AND SUN (Metod Izmereniya Potokov Radioizlucheniya Luny i Solntsa) tr. by V. A. Solodukhin. [1963] [6]p. (foreign text included) 3 refs. CSIRO Trans. no. 6097.
Order from OTS or SLA $1.10 63-19146

Trans. of #Iz[vestiya] Vyss[hikh] Uch[ebnykh] Zav[edenii]. Radiofizika (USSR) 1960, v. 3, no. 4, p. 722-723.
Another trans. is available from ARS in Its Journal, v. 32, no. 9, $3.00.

DESCRIPTORS: *Radio signals, *Radio astronomy, Moon, Sun, *Lunar probes, Telescopes, Calibration, Blackbody radiation, Temperature, Measurement, Extraterrestrial radio waves.

Molchanov, A. P., Kaidanovskii, N. L., and Peterova, N. G.
OBSERVATIONS OF LOCALIZED RADIO SOURCES ON THE SUN WITH THE LARGE RADIO TELESCOPE OF THE MAIN ASTRONOMICAL OBSERVATORY AT A WAVELENGTH OF 2.3 cm (PRELIMINARY RESULTS) (Nablyudeniya Lokal'nykh Istochnikov Radioizlucheniya Solntsa na Bol'shom Radioteleskope GAO na Volne 2.3 cm (Predvaritel'nye Rezul'taty)) tr. by P. A. Kazakov. [1962] [4]p. (foreign text included) 9 refs. [CSIRO Trans.] 6073.
Order from OTS or SLA $1.10 63-13600

Trans. of Solnechnye Dannye (USSR) 1961, no. 3, p. 68-69.

DESCRIPTORS: *Radio astronomy, *Extraterrestrial radio waves, Sources, *Sun, Sunspots, Analysis, *Solar radiation

Observations of solar radio emission were carried out in October-November, 1959. Fifteen records of the Sun's passage across the aerial were obtained and analyzed. The size of the radio sources observed did not exceed the size of the corresponding sunspot groups which was determined as the distance between the outer edges of the umbrae of the remotest spots in the group. Since this result was found from the broadening of the aerial diagram, the size of the real sources might be still smaller; (2) The height of the observed sources above the photosphere was equal to $0.06 \pm 0.02\ R_\odot$ for the source associated with group no. 594 and did not exceed $0.07\ R_\odot$ for the unresolved sources associated with groups nos. 596 and 597. The above values were found from the difference between the velocities of the optical formations and the radio emission centres of gravity for the sources during the Sun's rotation; (3) The radio flux from the sources did not change much with their motion from the solar limb towards the centre of the solar disk.

Mörikhofer, W. and Steinhauser, F., eds.
THE RESULTS OF INTERFERENCE FILTER MEASUREMENTS OF SOLAR RADIATION FROM 350 to 1000 nm. [1962] 10p.
Order from SLA $1.10 63-10678

Trans. of Archiv für Meteorologie, Geophysik und Bioklimatologie. Series B: [Allgemeine und Biologische Klimatologie] (Austria) 1958, v. 9, no. 1 p. 73-79.

DESCRIPTORS: *Solar radiation, Interference analyzers, *Filters (Electromagnetic wave), *Solar spectrum, Measurement, Data.

Parenago, P. P.
31 NEW VARIABLE STARS IN THE NEBULA OF ORION [31 Novaya Peremennaya Zvezda v Tumannosti Oriona]. [1963] [3]p. (tables refs. omitted).
Order from OTS or SLA $1.10 63-14913

Trans. of Peremennye Zvezdy (USSR) 1950, v. 7 [no. 4] p. 195-196.
Another trans. is available from SLA as RT-3985, 4p.

DESCRIPTORS: *Stars, Nebulae, Optical properties, Photographic analysis, Astrophysics, *Variable stars.

Parenago, P. P.
ON THE DISTRIBUTION IN SPACE AND MOTIONS OF PLANETARY NEBULAE. [1963] [14]p. (figs. tables omitted).
Order from OTS or SLA $1.60 63-14915

Trans. of Astronomicheskii Zhurnal (USSR) 1946, v. 23, no. 2, p. 69-81.

DESCRIPTORS: *Nebulae, *Interstellar matter, Motion, Distribution, Absorption, Photographic analysis, Astrophysics, Celestial mechanics.

Parenago, P. P.
ON THE MOTIONS OF THE GLOBULAR STAR CLUSTERS [O Dvizheniyakh Sharovykh Zvezdnykh Skoplenii]. [1963] [13]p. (tables omitted).
Order from OTS or SLA $1.60 63-14916

Trans. of Astronomicheskii Zhurnal (USSR) 1947, v. 24, no. 3, p. 167-177.
Another trans. is available from SLA as RT-3978, [18]p.

DESCRIPTORS: *Stars, Galaxies, Motion, Velocity, Determination, Astrophysics.

Parenago, P. P.
ON THE NATURE OF THE VARIABLE STARS IN THE ORION NEBULA (O Prirode Peremennykh Zvezd v Tumannosti Oriona]. [1963] [18]p. (tables omitted).
Order from OTS or SLA $1.60 63-14923

Trans. of Peremennye Zvezdy (USSR) 1950, v. 7, [no. 4] p. 169-181.
Another trans. is available from SLA as RT-3984, 27p.

DESCRIPTORS: *Variable stars, *Nebulae, Galaxies, Stars, Optical properties, Brightness, Colors, Distribution, Astrophysics.

The number of variable stars of the type of the Orion nebula is very great and comprises about 1000 stars up to 16^m at maximum, or about 20% of all stars in the Orion nebula. Variable stars of the type of the Orion nebula show a strong concentration in the middle of the Orion nebula where there is found a scattered stellar aggregation. The number of variable stars of the type of the Orion nebula increases in proportion to the diminution of their amplitude according to the exponential law. A typical representative of the variable stars of the type is examined--T Orionis. Reasons have been given to show that variable stars of the type of the Orion nebula are not stars whose variability is caused by obstruction by the matter of the nebula. The Orion nebula is surrounded by a stellar association of types O and T simultaneously (according to the classification of Ambartsumian). The variable stars as well as the other stars were formed in this association. The number of variable stars of the type of the Orion nebula is small with absolute magnitudes from -4^m to $+3^m$ and great with absolute magnitudes from $+4^m$ to $+6^m$, and perhaps with weaker ones. It is probable that stars of types O-A develop along the main sequence on the side of the weaker absolute magnitudes, but the subgiants are rather quickly transformed into dwarfs of types dG-dM. (Extracted)

Schatzman, E.
PHYSICAL STUDY OF ACCRETION. [1963] [17]p. 13 refs.
Order from SLA $1.60 63-14684

Trans. of French language mono. Gas Dynamics of Cosmic Clouds, n.p., 1955, chap. 37, p. 193-205.

DESCRIPTORS: *Interstellar matter, Gases, Motion, Heating, Ionization, Spectroscopy, *Stars, Growth.

From the calculations presented, it appears that the rate of accretion used by Bondi and Hoyle is largely overestimated. Therefore, accretion in astrophysics may be much less important than Bondi believes. (Author)

Severnyi, A. B.
SOME PECULIARITIES OF THE MAGNETIC FIELDS IN RELATION WITH SOLAR FLARES. [1963] 7p. 6 refs.
Order from OTS or SLA $1.10 63-14889

Trans. of #[Astronomicheskii Zhurnal (USSR) 1962, v. 39, no. 6, p. 961-964].

DESCRIPTORS: *Solar flares, *Magnetic fields, Measurement, Correlation techniques, Analysis.

Preliminary results are given on findings following the observation of transverse fields in flare-development regions. It was found that the field configuration in these regions is characterized by the crossing or "coexistence" of fields having different directions. It was noted that chromospheric streamers of different directions are often observed in bright regions of flares on spectroheliograms. The "coexistence" of fields having different directions inside spots, in particular small "inclusions" of a transverse field in regions of the same polarity, are also frequently observed.(Author)

Starikova, G. A.
THE DOUBLE SYSTEM OF LONG PERIOD CEPHEIDS ĊE CASSIOPEIAE [Dvoinaya Sistema Dolgo-periodicheskikh Tsefeid ĊE Cassiopeiae]. [1963] [10]p. (figs. refs. omitted).
Order from OTS or SLA $1.10 63-14918

Trans. of Peremennye Zvezdy (USSR) 1949, v. 7 [no. 3] p. 124-132.
Another trans. is available from SLA as RT-3983, 18p.

DESCRIPTORS: *Variable stars, *Stars, Brightness, Optical properties, Photographic analysis, Astrophysics.

BEHAVIORAL SCIENCES

Jervais, W.
DR. HEINRICH MAURACH ON THE OCCASION OF HIS 60TH BIRTHDAY. [1963] 2p.
Order from SLA $1.10 63-14502

Trans. from Glastechnische Berichte (Germany) 1940 [v. 18] June.

DESCRIPTORS: *Scientific personnel, Glass, Industries, Biographies.

Psychology

Babanova, M.
A CONFERENCE ON THE STATUS, TASKS AND PROSPECTS FOR PSYCHOLOGICAL SCIENCES IN BULGARIA. 22 May 63, 6p. JPRS: 19350.
Order from OTS $0.50 63-21892

Trans. of Filosofska Misul (Bulgaria) 1963, v. 19, no. 1, p. 144-147.

DESCRIPTORS: Symposia, *Psychology, Bulgaria.

A summary of the activities of a conference sponsored by the Bulgarian Academy of Sciences, December 1962.

Genkin, A. A., Shek, M. P. and others.
SOME PRINCIPLES OF CORRECTION TABLES TO BE USED FOR EVALUATION OF THE RATE OF INFORMATION PROCESSING [AND] DECREASE IN THE VISUAL FACULTY UNDER CERTAIN CONDITIONS OF FATIGUE. 10 June 63, 20p. 10 refs. JPRS: 19615.
Order from OTS $0.75 63-31013

Trans. of #Voprosy Psikhologii (USSR) 1963 [v. 9] no. 1, p. 104-109, 111-113.

DESCRIPTORS: *Psychology, Corrections, Analyzers (Psychology), *Vision, Hearing, *Fatigue (Physiology), Tables.

BIOLOGICAL SCIENCES

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 200 (BIOLOGY AND MEDICINE SERIES). 6 June 63, 15p. JPRS: 19594.
Order from OTS $0.50 63-31003

Consists of abstracts of articles from selected scientific and technical journals of Czechoslovakia and Poland.

DESCRIPTORS: *Abstracts, Bibliographies, *Biology, *Medicine, Physiology, Air conditioning equipment, Heating, Lighting equipment, Ventilation, Aerosols, Diseases, Textile industry, Neurology, Surgery, Therapy, Abnormal psychology.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 201 (BIOLOGY AND MEDICINE SERIES). 6 June 63, 23p. JPRS: 19595.
Order from OTS $0.75 63-31004

Consists of abstracts of articles from selected scientific and technical journals of Czechoslovakia and Hungary.

DESCRIPTORS: *Abstracts, Bibliographies, Biology, *Medicine, Neurology, Physiology, Physical fitness, Vasoactive agents, Animals, Anatomy, Diseases, Heart, Pharmacology, Pathology, Diet, Metabolism, Nervous system.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 202 (BIOLOGY AND MEDICINE SERIES). 6 June 63, 10p. JPRS: 19596.
Order from OTS $0.50 63-31005

Consists of abstracts of articles from selected scientific and technical journals of Czechoslovakia.

DESCRIPTORS: *Abstracts, Bibliographies, *Biology, *Medicine, Diseases, Pathology, Therapy, Public health, Safety, Pediatrics, Industrial medicine, Food, Veterinary medicine.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 205 (BIOLOGY AND MEDICINE SERIES). 11 June 63, 12p. JPRS: 19650
Order from OTS $0.50 63-31030

Consists of abstracts of articles from selected scientific and technical journals of Hungary.

DESCRIPTORS: *Abstracts, Bibliographies, *Biology, *Medicine, Microorganisms, Diseases, Radiobiology, Vaccines, Public health, Psychology, Pharmacology, Physiology.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 208 (BIOLOGY AND MEDICINE SERIES). 11 June 63, 20p. JPRS: 19654.
Order from OTS $0.75 63-31033

Consists of abstracts of articles from selected scientific and technical journals of Hungary and Poland.

DESCRIPTORS: *Abstracts, Bibliographies, *Biology, *Medicine, Medical examination, Pathology, Diseases, Radiobiology, Medical personnel, Physiology, Biochemistry, Neurology, Wounds, Immunity, Surgery, Infants.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 210 (BIOLOGY AND MEDICINE SERIES). 11 June 63, 13p. JPRS: 19657.
Order from OTS $0.50 63-31035

Consists of abstracts of articles from selected scientific and technical journals of Rumania.

DESCRIPTORS: *Abstracts, Bibliographies, *Biology, *Medicine, Space biology, Physiology, Agriculture, Fishes, Plants (Botany), Animals, Immunity, Veterinary medicine.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 214 (BIOLOGY AND MEDICINE SERIES). 18 June 63, 17p. JPRS: 19707.
Order from OTS $0.50 63-31052

Consists of abstracts of articles from selected scientific and technical journals of Hungary and Poland.

DESCRIPTORS: *Abstracts, Bibliographies, *Biology, *Medicine, Diseases, *Veterinary medicine, Meat, Physiology, Pharmacology, Viruses, Reproduction (Physiology).

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 218 (BIOLOGY AND MEDICINE SERIES). 24 June 63 [46]p. JPRS: 19825.
Order from OTS $1.25 63-31106

Consists of abstracts of articles from the scientific and technical journals of Yugoslavia.

DESCRIPTORS: *Abstracts, Bibliographies, *Biology, *Medicine, Industrial medicine, Spectroscopy, Toxicology, Drugs, Surgery, Diseases, Pediatrics, Larynx, Diagnosis, Pregnancy, Medical personnel, Public health, Physiology, Radiobiology, Psychiatry, Veterinary medicine.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 219 (BIOLOGY AND MEDICINE SERIES). 26 June 63 [46]p. JPRS: 19856.
Order from OTS $1.00 63-31111

Consists of abstracts of articles from the scientific and technical journals of Czechoslovakia, Hungary and Poland.

DESCRIPTORS: *Abstracts, Bibliographies, *Biology, *Medicine, Physiology, Embryos, Surgery, Diseases, Neurology, Drugs, Pregnancy, Antibiotics, Tuberculosis, Vaccines, Biochemistry, Bacteria, Cancer, Poisoning, Psychiatry, Space medicine, X rays, Diagnosis, Communicable diseases, Radiation effects, Children.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 221 (BIOLOGY AND MEDICINE SERIES). 26 June 63 [18]p. JPRS: 19889.
Order from OTS $0.50 63-31136

Consists of abstracts of articles from the scientific and technical journals of Hungary.

DESCRIPTORS: *Abstracts, Bibliographies, *Biology, *Medicine, Biochemistry, Hematology, Conditioned reflex, Drugs, Neurology, Pharmacology, Pathology, Diet, Psychology, Education, Cetacea.

BIOLOGICAL ASPECTS OF CYBERNETICS. 11 June 63, 348p. JPRS: 19637.
Order from OTS $5.00 63-31024

Trans. of mono. Biologicheskie Aspekty Kibernetiki: Sbornik Rabot, Moscow, 1962, 239p.

DESCRIPTORS: *Cybernetics, Biology, Medicine, Cells (Biology), *Metabolism, *Proteins, *Nucleic acids, Physiology, Biochemistry, Behavior, *Nervous system, Stimulation, Inhibition, Mathematics, *Computers, *Bioelectronics, Brain, *Analyzers (Psychology), Memory, Colors, *Retina, Perception, *Vision, *Teaching machines, Selection, Motor reactions, *Enzymes, *Automation.

Contents:
Preface
Cybernetics and progress in science and technology, by N. M. Sisakyan
The application of cybernetics to biology and medicine, by V. V. Parin
Self-regulation of cellular processes, by G. M. Frank
The nucleic acids and the problem of biosynthesis of protein, by A. S. Spirin
Ways for developing physiology and problems of cybernetics connected with them, by N. A. Bernshtein
On tactics used in controlling complicated systems in connection with physiology, by I. M. Gel'fand and others
The theory of functional systems as a prerequisite to the development of physiological cybernetics, by P. K. Anokhin
An experiment in the use of mathematical modelling in the study of the interrelation of the processes of stimulation and inhibition, by G. V. Savinov and others
The application of mathematical methods in processing the results of biological observations, by B. V. Gnedenko and others
The application of electronic computer techniques to the analysis of bioelectric processes in the brain, by M. N. Livanov
New developments in obtaining and analyzing information about physiological functions of the entire organism, by E. B. Babskii
Information processing by the brain, by A. V. Napalkov
Problems and difficulties in the study of biological analyzer systems, by G. V. Gershuni
Coding information about color in the retina, by N. D. Nyuberg
Electrophysical study of retinal functions, by A. L. Byzov
On the identification of objects in the visual system, by V. D. Glezer and others
Experiments on teaching machines to recognize visual images, by M. A. Azerman
Modeling the process of instructing for recognition on a universal computer, by M. M. Bongard
Teaching stochastic machines, by V. I. Varshavskii and others
Human solution of the problem of selection with probability reinforcement of the motor responses by M. A. Alekseev and others
Some mechanisms of biochemical self-regulation at the cell level, by K. A. Kafyani
Experience in determining organism automatism and its use, by V. G. Nesterov
An automatic optimum frequency stimulator as an initial general-physiological model for developing automatic biologically controlled treatment-diagnostic equipment, by K. D. Gruzdev and M. P. Spichenkov
Discussion, by D. N. Menitskii
Bibliographic data.

RADIOBIOLOGY, 1962, VOL. 2, NO. 2. Mar 63, 240p. 451 refs.
Order from OTS $3.00 AEC-tr-5429

Trans. of Radiobiologiya (USSR) 1962, v. 2, no. 2, p. 177-334.

DESCRIPTORS: *Radiobiology, *Sulfur compounds, Oxidation, Radiation effects, *Desoxyribonucleic acids, Pyruvic acid, *Phosphorylation, Cells (Biology), Metabolism, Cholesterol, Radiation sickness, Excretion, *Yttrium, *Cerium, *Lead, *Acetates, Radioactive isotopes, *Strontium, Eggs, Fishes, *X-rays, Dosage, Laboratory animals, Esophagus, *Cardiovascular system, *Brain, Electric currents, *Liver, Blood circulation, *Autonomic nervous system, Aquatic animals, Reflexes, Insects, *Nervous system, *Mutations, *Radioprotective agents, *Anoxia, *Bone marrow, Escherichia, Antigens.

Contents:
Mechanism of protective antioxidative action of some sulfur-containing compounds, by A. I. Zhuravlev and B. N. Tarusov
Relative effectiveness of direct and indirect action of ionizing radiation on deoxyribonucleic acid, by M. I. Mekshenkov
Oxidative phosphorylation and transformation of pyruvic acid in cerebral mitochrondia of normal and irradiated animals, by R. I. Skvortsova
Cholesterol metabolism in dogs during radiation sickness, by K. V. Smirnov and V. A. Shaternikov
Effects of the oxidation products of adrenaline upon radiation leukopenia, by R. N. Abdullina
Acceleration of the elimination of yttrium, cerium and lead from the organism with the aid of uramil diacetate, 1, 2-diaminecyclohexane tetraacetate and polyethylene polyaminopolyacetate, by I. P. Tregubenko and others
Accumulation of radioactive isotopes of strontium and yttrium in eggs of marine fishes, by G. G. Polikarpov and V. N. Ivanov
Comparative study of the effects of X radiations at 197 kv and braking radiations generated with a linear accelerator at 3 Mev upon the organism of animals, by A. K. Arnautov and others
Peculiarities of the dependence of death of mice "under-the-ray" upon dose, by L. B. Koznova
Effect of ionizing radiation upon the function of ciliated epithelium of frog esophagus, by L. D. Klimovskaya
Significance of the disturbance of central vegetative regulation upon injury of the cardiovascular system by the action of ionizing radiation, by N. P. Smirnova
Influence of hypothalamus and reticular formation of midbrain upon electrical activity of various cortical layers in radiation sickness, by L. I. Kaburneeva
Blood flow in the liver of healthy and irradiated dogs and those affected by ionizing radiation, by V. P. Fedotov
Effects of ionizing radiations upon reactivity of adrenergic and cholinergic receptors, by A. Danysz
Study of radioactivity of benthonic animals in freshwater reservoirs, by I. P. Lubyanov
Changes of radiosensitivity in nerve tissue, by P. F. Minaev and O. F. Logvinova
On the problem of the state of the central link of the vascular unconditioned-reflex arc in radiation pathology, by G. V. Bavro
Behavior of the fruit fly (Drosophila Melanogaster) during irradiation, by V. G. Khrushchev and others
Investigation of the state of the aortic reflex arc at various stages of radiation sickness, by A. N. Balashova
Deviations of higher nervous activity in second generation of dogs subjected to chronic internal irradiation with Sr^{90} beta rays, by V. A. Nazarov
Dependence of the frequency of occurrence of dominant lethal mutations in the spermatids of Drosophila upon dose of irradiation with fast neutrons, by E. A. Abeleva and Yu. A. Lapkin
Increased radioprotective effect from a combined use of 5-methoxytryptamine and mercamine, by I. G. Krasnykh and others
Significance of time factor in radioprotective effect of local asphyxia of bone marrow, by N. P. Lebkova and S. P. Yarmonenko
Restoration processes in the bone marrow of irradiated rats after treatment with homologous bone marrow, by S. A. Rogacheva
Effects of radioprotective substances upon Escherichia Coli irradiated in oxygen-free medium, by E. A. Val'dshtein
The roentgen and rad and conditions of their application, by S. N. Ardashnikov and N. S. Chetverikov
Stimulation of immunogenesis of irradiated animals with combined use of some bacterial antigens, by N. N. Klemparskaya and G. A. Shal'nova
On a possible common mechanism of action of radioprotectors, by E. E. Ganassi and L. Kh. Eidus.

SOVIET BIOASTRONAUTICS: SELECTED ABSTRACTS. 16 Apr 63 [38]p. 51 refs. AID rept. P-63-48. AD-403 812
Order from OTS or SLA $3.60 63-19355

DESCRIPTORS: *Abstracts, *Space medicine, *Space biology, Radiation effects, *Closed - cycle ecological systems, *Life support, Weightlessness, Space environmental conditions, Human engineering, Space flight, Adaptation (Physiology).

SOVIET RESEARCH IN ECOLOGY. 31 May 63, 16p. JPRS: 19496.
Order from OTS $0.50 63-21961

Trans. of Voprosy Ekologii (USSR) 1962, no. 4, p. 53-55, 66-67, 157-159.

DESCRIPTORS: *Ecology, Dams, *Lakes, *Marine biology, Fishes, Geography, Radiation effects, Atmosphere, *Radiological contamination.

Contents:
The reservoir as a biotope, by G. B. Mel'nikov
Radioecology, by A. A. Peredel'skii
Table of contents.

Grimard, L.
PASSAGE OF SENSITIVITY FROM THE CHICKEN TO THE CHICKEN EMBRYO. [1963] 2p. 2 refs.
Order from SLA $1.10 63-14542

Trans. of Soc[iété de] Biol[ogie et de ses Filiales]. C[omptes] R[endus des Séances] (France) 1935, v. 118, p. 967-969.

DESCRIPTORS: *Genetics, *Sensitivity, *Chickens, *Embryos, Eggs, Serum, Antigen - antibody reactions.

Guseva, K. A.
WATER BLOOM, ITS CAUSES, PREDICTION AND CONTROL ("Tsvetenie" Vody, Ego Prichiny, Prognoz i Mery Bos'by s Nim) tr. by V. Topchy. 1963, 115p. 108 refs. NRCC Technical Trans. 1068.
Order from NRCC $6.00 NRCC C-4387

Trans. of Vsesoyuznoe Gidrobiologicheskoe Obshchestvo. Trudy (USSR) 1952, v. 4, p. 3-92.

DESCRIPTORS: *Plankton, Lakes, Rivers, Dams, *Algae, Plants (Botany), Colors, *Odors, Taste, Oils, Bacteria, *Contamination, Distribution, *Nutrition, Culture media.

Klembovskii, A. I.
ANATOMY OF BRONCHOPULMONARY SEGMENTS AND COLLATERAL RESPIRATION IN THE LUNG (Anatomiya Bronkholegochnykh Segmentov i Kollateral'noe Dykhanie v Legkom). 15 Mar 63 [12]p. 30 refs. [NIH] no. 3-24-63.
Order from OTS or SLA $1.60 63-19112

Trans. of Arkhiv Anat[omii, Gistologii i Embriologii] (USSR) 1962, v. 42, no. 3, p. 61-69.

DESCRIPTORS: Anatomy, *Lungs, *Blood vessels, Histology, Tissues (Biology), Morphology, *Respiration, Blood circulation.

In each lung of man there are most often contained scores of bronchopulmonary segments. Arterial vascular segments correspond to the bronchopulmonary-basic segments of the lung, and the venous are distributed so that they have at their center a vein at the boundary of adjacent bronchopulmonary segments and basins for half the territory of each of them. However, the structure of the segments of the lower lobes of the lung often digresses from that which is described above. In the lungs of adults, side by side with the lobular groups of structural units, are uniquely constructed complexes consisting of alveoli and alveolar passages, indistinctly demarcated on pulmonary lobules and acini. They impart to the lung a tract, labyrinthine, and trabecular structure, instead of lobular; they are arranged chiefly in the lower lobes of the lung and predominate in persons of advanced age. The bronchopulmonary segments of the upper and middle lobes of the lung -- the segments of the lower lobe least -- have the greatest individualization. The alveolar tracts permit collateral respiration to be realized in the lung, i.e., the movement of air in a roundabout way, of the bronchi and bronchioles, from the unique construction of the acinus to another directly through a pore in the walls of the pulmonary alveoli. The collateral respiration present in the lung does not depend on the limits of the bronchopulmonary segments. (Author)

Biochemistry

ABSTRACTS PERTAINING TO COMMUNIST CHINA IN SOVIET ABSTRACTS JOURNAL: BIOCHEMISTRY, 1961, NOS. 1-2. 5 Dec 61 [13]p. JPRS: 11291.
Order from OTS or SLA $1.60 62-13673

Trans. of selected abstracts from Referativnyi Zhurnal. Khimiya. Biologicheskaya Khimiya] (USSR) 1961, nos. 1-2

DESCRIPTORS: *Abstracts, *Bibliographies, *Biochemistry, Vitamins, Hormones, Pharmacology, Toxicology, Microorganisms, Viruses, Antibiotics, Immunology, Animals, Medicine.

ABSTRACTS PERTAINING TO COMMUNIST CHINA IN SOVIET ABSTRACTS JOURNALS NO. 74 (BIOCHEMISTRY SERIES). 14 June 63, 14p. JPRS: 19682.
Order from OTS $0.50 63-31039

Trans. of selected abstracts from Referativnyi Zhurnal. [Khimiya]. Biologicheskaya Khimiya (USSR) 1962, nos. 1, 3-4, 11-12, 22, 24.

DESCRIPTORS: *Abstracts, Bibliographies, *Biochemistry, China, Plants (Botany), Vitamins, Hormones, Microorganisms, Animals, Pharmacology, Toxicology.

Bertrand, Didier.
THEORETICAL BIOLOGICAL CHEMISTRY: A NEW THEORY ON THE RELATIONSHIP BETWEEN CHEMICAL STRUCTURE AND BIOLOGICAL ACTIVITY. [1963] 3p. 7 refs.
Order from SLA $1.10 63-14033

Trans. of Academie des Sciences [Paris. Comptes Rendus] (France) 1953, v. 237, p. 1800-1802 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: Biochemistry, Theory, *Molecular structure, *Fluorescence, *Spectroscopy, Alkaloids, Carcinogenic agents, Antibiotics.

Kotkova, K. I., Orlovskaya, N. N., and Enevich, T. F.
PHOTOSENSITIZED OXIDATION OF EGG ALBUMIN AMINO ACIDS AND CHANGES IN THE MACROSTRUCTURE OF ITS MOLECULE. [1962] [9]p. 18 refs.
Order from OTS or SLA $1.10 63-13033

Trans. of Ukrayins'kyi Biokhimichnyi Zhurnal (USSR) 1961 [v. 33] no. 1, p. 3-13.

DESCRIPTORS: Photosensitivity, Oxidation, *Albumins, *Eggs, *Amino acids, Photochemistry, Molecular structure, Proteins.

It was found that in photosensitized oxidation of egg albumin by methylene blue under conditions of weakly alkaline reaction (pH 8.1--8.3) cysteine and histidine are oxidized more rapidly, tyrosine and tryptophan some-what more slowly. In 30 min of oxidation, 5.8 M of oxygen are consumed per mol of egg albumin, while 3 cysteine SH groups, 1.8 histidine groups, 1.9 of tyrosine and 0.25 of tryptophan disappear. At this stage of photooxidation, to judge from the failure of any protein to precipitate at the isoelectric point, no denaturation has taken place. Further oxidation for 60 min, with absorption of 15 M of oxygen, does not alter the number of unoxidized SH group residues. On the other hand, two more histidine residues, one more of tyrosine, and 0.5 more of tryptophan are oxidized. This stage of oxidation involves substantial changes in the state of the protein. A portion of it is denatured in the course of photooxidation; the protein that has retained its "native" state is unstable and denatures by itself at room temperature. Photooxidation of egg albumin goes forward more slowly in weakly acid media (pH 5.45--5.60); histidine is not broken down at all. The other amino acids--tyrosine, tryptophan and cysteine--are oxidized. The stability of histidine at pH 5.45--5.60 may be due to the transition of the uncharged imidazole group into a cation group. (Author)

Kretovich, V. [L]. and Tokareva, R.
INTERACTION BETWEEN AMINO ACIDS AND SUGARS AT ELEVATED TEMPERATURES. [1963] 17p. 27 refs.
Order from OTS or SLA $1.60 63-14577

Trans. of Biokhimiya (USSR) 1948, v. 13 [no. 6] p. 508-515.
Other translations are available from LC or SLA mi$2.40, ph$3.30 as 60-13733, DSIR LLU M. 1030 [1960] 17p. and as 60-18913 [1960] 19p.

DESCRIPTORS: *Amino acids, *Carbohydrates, Chemical reactions, Temperature, *Xylose, Odors, Colors, Carbonyl radicals, Aldehydes.

Kuninaka, Akira.
STUDIES ON THE TASTE OF RIBONUCLEIC ACID DERIVATIVES. [1963] 15p. 23 refs.
Order from SLA $1.60 63-10862

Trans. of [Nihon Nogei-Kagakkai Shi (Japan) 1960, v. 34, p. 489-492].

DESCRIPTORS: *Taste, *Ribonucleic acids, Purines, Pyrimidines, Nucleosides, Nucleotides, Amino acids.

Among the compounds related to the nucleic acids, purine pyrimidine bases, nucleosides, 2'- and 3'-mononucleotides and polynucleotide do not have a taste practically, if they are alone, whereas 5'-mononucleotides of 6-hydroxypurine derivatives exhibit a specific taste. The specific and remarkable synergism of taste was observed between these nucleotides and monosodium L-glutamate. (Author)

Lazarov, N. and Mirchev, V.
ESTIMATION OF SERUM COPPER. [1962] [4]p. 2 refs.
FASEB manuscript no. S 100-2.
Order from OTS or SLA $1.10 63-15715

Trans. of Voprosy Meditsinskoi Khimii (USSR) 1962, v. 8, no. 3, p. 305-306.

DESCRIPTORS: *Blood serum, *Copper, Quantitative analysis, Complex compounds, Optical properties, *Colorimetric analysis.

The method is based on the formation of a yellow complex compound when copper cations interact with cryogenine (3-semicarbazidobenzamide). In the Cu concentration range of 10-250 μg%, the color depends directly on the copper content of the solution.

Quilico, A., Panizzi, L., and Rosnati, V.
ON THE CONSTITUTION OF ECHINULIN (Sulla Costituzione dell'Echinulina) tr. by D. A. Sinclair. 1963, 12p. 15 refs. NRCC Technical Trans. 1070.
Order from NRCC $1.00 NRCC C-4401

Trans. of mono. International Congress of Pure and Applied Chemistry (no. 11) London, 1947. Proceedings v. 2, p. 259-266.

DESCRIPTORS: *Biological products, *Phycomycetes, Molds (Organisms), Chemical analysis, Chemical properties, Hydrogenation, Oxidation.

SOVIET RESEARCH ON SAPROPHYTIC CULTURES. 14 June 63, 11p. 15 refs. JPRS: 19683.
Order from OTS $0.50 63-31040

Trans. of Fiziologiya Rastenii (USSR) 1961 v. 8, no. 3, p. 358-360; Meditsinakaya Promyshlennost' SSSR [1961] v. 15, no. 6, p. 39-41.

DESCRIPTORS: Microorganisms, *Fungi, *Growth substances, Parasites, *Ergot, *Biosynthesis, Culture media, Growth.

Contents:
The effect of gibberellic acid on the Ergot Claviceps Purpurea Tul. in a saprophytic and parasitic culture, by N. I. Ostrovskii and others
The capability of certain strains of the Ergot Claviceps Purpurea Tul. to synthesize the saprophytic culture, by N. I. Ostrovskii and others.

Aleev, B. S. and Mudretsova, K. A.
THE ROLE OF PHYTOPLANKTON IN THE DYNAMICS OF NITROUS SUBSTANCES IN A FLORESCENT RESERVOIR (Rol' Fitoplanktona v Dinamike Azota v Vode "Tsvetushchego" Vodoema) tr. by G. Belkov. 1963, 14p. 10 refs. NRCC Technical Trans. 1072.
Order from NRCC $1.00 NRCC C-4410

Trans. of Mikrobiologiya (USSR) 1937, v. 6, no. 3, p. 329-338.

DESCRIPTORS: *Plankton, *Algae, *Water supplies, *Nitrogen compounds, Dams, Bacteria.

Desyatskova, R. G., Diskina, L. S., and Andzhaparidze, O. G.
BASIC PROPERTIES AND FUNCTIONS OF RIBONUCLEIC ACID FROM TICK-BORNE ENCEPHALITIS VIRUS (Osnovnye Svoistva i Funktsii Ribonukleinovoi Kisloty Virusa Kleshchevogo Entsefalita). 19 Mar 63, 10p. 23 refs. Trans. V-1819.
Order from OTS or SLA $1.10 63-15938

Trans. of #Voprosy Virusologii (USSR) 1963, v. 8, no. 1, p. 20-24.

DESCRIPTORS: *Ribonucleic acids, *Ticks, *Encephalitis viruses, Disease vectors, Virus diseases.

Strain PAN of tick-borne encephalitis virus was adapted to the culture of the kidney tissue of a swine embryo. The intact virus, resynthesized from the viral RNA, was used for the identification of the viral RNA. In 27 experiments the infectivity of RNA, isolated from the suspension of infected cells, comprised, on the average, 0.05% of the infectivity of the virus suspension. Pathogenicity of RNA, isolated from mature virus, was 0.01% of infectivity of the initial virus. RNA was pathogenic to mice in subcutaneous and intraperitoneal methods of infection, but not when introduced into the gastro-intestinal tract. The RNA preparations lost their infectious characteristics in the presence of ribonuclease, but the intact virus did not. The infectivity of the viral RNA was fully

inhibited by normal calf serum, but the intact virus was not affected. At high temperatures inactivation of the intact virus was more rapid than that of viral RNA. The effect of 1 M NaCL solution on the appearance of the cytopathic effect of viral RNA and on plaque formation in the cell cultures was observed. The penetrability of the cells increased and the RNA molecules became more resistant to the reaction of the medium. In all the cases, pathogenicity was the same in resynthesized intact virus and tick-borne virus

Ritzerfeld, W. and Nehrkorn, A.
INVESTIGATIONS ON THE SALT TOLERANCE OF MICROORGANISMS (Untersuchungen zur Salztoleranz von Mikroorganismen) tr. by D. A. Sinclair. 1963, 10p. 13 refs. NRCC Technical Trans. 1076.
Order from NRCC $0.50 NRCC C-4429

Trans. of Zentr[alblatt für] Bakteriol[ogie] Parasitenk [unde und Infektionskrankheiten]. Abt. 1. Orig[inale] (East Germany) 1962, v. 187, no. 2, p. 243-251.

DESCRIPTORS: *Microorganisms, *Bacteria, *Sodium compounds, *Chlorides, Respiration, *Tolerances (Physiology), *Pseudomonas.

Yushchenko, G. V., Tereshchenko, M. P. and others.
EFFECT OF CORTISONE ON THE COURSE OF THE INFECTIOUS PROCESS IN WHITE MICE INFECTED WITH PATHOGENIC MICROORGANISMS (INCLUDING SUMMARY). 27 Sep 62 [14]p. 8 refs. ABL Trans. no. 692; JPRS: R-2734-D; AD-291 638.
Order from OTS or SLA $1.60 63-19235

Trans. of an article from an unidentified Russian source, n.d., p. 134-138.

DESCRIPTORS: *Corticosteroid agents, Drugs, *Infections, *Mice, Microorganisms, Sensitivity, *Biological assay, Pathology.

Under experimental conditions cortisone considerably increased the sensitivity of white mice to pseudotuberculosis, listerellosis, pasteurellosis, erysipeloid, and salmonellosis; therefore, cortisone-treated white mice can be employed as a very sensitive biotest in carrying out corresponding analyses. Cortisone markedly increased the sensitivity of white mice to the vaccine culture of plague and tularemia microorganisms and thus, can be utilized in individual experimental investigations. In experiments with highly virulent tularemia and plague cultures, to which white mice are highly sensitive even without cortisone, no further increase has been observed in the sensitivity of animals to infection (tularemia), or their sensitivity increased only slightly (plague). Upon examination of wild rodents in the natural plague nidi, no advantages could be elicited from the use of cortisone-treated white mice for biological tests. (Author)

Neurology and Psychiatry

Cerf, Jean.
THERMIC NARCOSIS AND MEMBRANE POLARIZATION OF THE FROG'S NERVE (Narcose Thermique et Polarization Membranire du Nerf de la Grenouille). [1963] 4p.
Order from SLA $1.10 63-16386

Trans. of Arch[ives] Intern[ationales] de Pharmacodynamie et de Therapie (Belgium) [1956] v. 109, no. 3/4, p. 329-331.
Another trans. is available from SLA as 58-230.

DESCRIPTORS: *Nerves, *Frogs, *Anesthesia, Membranes (Biology), *Polarization, Heat treatment, *Paralysis, Alcohols.

Nahunek, K.
THE TREATMENT OF ENDOGENIC DEPRESSIONS WITH PERPHENAZINE AND TRIHEXYPHENIDYL: CORRELATION WITH EXTRAPYRAMIDAL SYMPTOMOLOGY [PT. 1] (Die Behandlung Endogener Beziehung zur Extrapyramidalen Symptomatologie). [1962] [9]p. (foreign text included).
Order from SLA $1.10 63-10519

Trans. of Acta Psychiatrica [et Neurologica] Scand[inavica] (Denmark) 1962, v. 38, no. 2, p. 108-111.

DESCRIPTORS: Psychoses, *Perphenazine, Piperidines, Phenyl radicals, Cyclohexanes, *Parasympatholytic agents.

Pathology

POLISH MEDICAL JOURNAL, 1962, VOL. 1, NO. 1, P. 1-218. 1962, 1v. PL-480 HEW.
Order from OTS $2.25 62-11066/1

DESCRIPTORS: Poland, *Medicine, Pathology, *Hyaluronate lyase, Blood vessels, *Thyroid gland, Antigen-antibody reactions, *Amino acids, Paper chromatography, *Diabetes, *Transaminases, *Addiction, *Vasoactive agents, Excretion, Epinephrine, *Hemolysis, Urine, *Aldehyde-lyases, Blood circulation, *Hepatitis, Respiration, Pneumoconioses, Isoniazid, Tuberculosis, Labeled substances, *Corticosteriod agents, Excision, *Stomach, Surgery, Bone, *Equine encephalomyelitis virus, Muscles, Diet, *Burns, Children, Histological techniques, Tolerances (Physiology), *Neuromuscular transmission, *Metrazol, Necrosis, *Decompression sickness, Diagnosis, *Tumors, Psychoses.

Contents:
The influence of hyaluronidase and novocaine on the permeability of the vascular wall, by A. Himmel and others
Intradermal test for the detection of thyroid antibodies, by B. Bratkowska-Seniow and others
Quantitative determination of free plasma amino acids in healthy individuals by means of column-paper chromatography, by S. Bober and others
A study of the levels of free amino acids in the plasma of diabetics by means of column-paper chromatography, by S. Bober and others

The effect of acute ethyl-alcohol in toxication on the activity of glutamic-pyruvic transaminase in the serum (SGPT) by S. Nowak and others

The effect of guanetidine on the elimination of free noradrenalin in the urine, by D. Aleksandrow and others

The effect of hypotensive drugs (serpasil, diuril) on the elimination of free noradrenalin in urine, by W. Januszewicz and B. Wocial

Paroxysmal nocturnal hemoglobinuria: a study on the mechanism of hemolysis, by S. Kirchmayer and others

Serum GOT, GPT and aldolase in chronic circulatory insufficiency, by M. Kedra and others

The diagnostic value of a heterohemagglutination test in epidemic hepatitis, by C. Jezyna and others

Changes in the composition of alveolar air in pneumoconiosis, pulmonary emphysema and bronchitis, by K. Marek

Distribution of C^{14} labelled INH in healthy and tuberculous guinea pigs, by T. Osewski

The influence of cortisone on penetration of C^{14} labelled isoniazid into the blood and organs of healthy and tuberculous guinea pigs, by T. Osewski

Total gastrectomy by author's own method, by J. Gasinski

Experimental infection of the bone tissue of mice with the Western equine encephalitis (W. E. E.) virus, by J. Markowa and A. Marek

The value of muscular biopsy in differential diagnosis of early diseases of muscular system in children, by Z. Chlap and N. Hornik

The effect of high-caloric and high-protein diet on the course of severe burns in young children, by I. Hanc and others

Interaction of symmetrical motor functions (further investigations) by I. Hausmanowa-Petrusewicz

Studies on the metrazol-flicker threshold in schizophrenia (a correlation with the sedation threshold) by K. Gerard

Bone necrosis in caisson disease, by A. Kaczurba

Radiological diagnosis of chondromatous tissue as applied to differential diagnosis of tumors, by J. Buraczewski.

Grabener, E.
A SIMPLIFIED "GASTRACID" TEST. [1962] 5p. 11 refs.
Order from SLA $1.10 63-10042

Trans. of Deutsche Med[izinische] Wochenschrift (West Germany) 1962, v. 87, no. 3, p. 1613-1614.

DESCRIPTORS: *Stomach, Secretion, *Acids, Test methods, Urine, Medical procedures, *Colorimetry, Drugs, Caffiene, Pyridines.

A simplified form of the "Gastracid" test is described: no control urine sample is required. After a red colour of the acidified urine has developed, alkalinity is achieved by adding sodium hydroxide. If the red colour disappears, the test is positive and a control urine sample need not be tested. 50 control tests were performed to show that, if desired, a cup of Nescafe can take the place of the caffeine tablet. In patients confined to bed this is in fact preferable. (Author)

Kogan, A. Kh., and Chechulin, A. S.
A NEW STRAIN OF TRANSPLANTABLE RAT SARCOMA OBTAINED BY PLACING A CELLOPHANE CAPSULE ON KIDNEY (Novyi Shtamm Perevivaemoi Sarkomy Krys Poluchennyi Nalozheniem Tsellofanovoi Kapsuly na Pochku). 11 Sep 62, 10p. 6 refs. NIH no. 9-7-62.
Order from OTS or SLA $1.10 62-33366

Trans. of Patol[ogicheskaya] Fiziol[ogiya] i Eksper[imental'naya] Terap[iya] (USSR) 1957, v. 1 [no. 3] p. 39-44.

DESCRIPTORS: *Cancer, Tumors, Rats, Transplantation, *Kidneys, Plastic films. Carcinogenic agents.

By placing compression cellophane capsules on kidneys of rats a polymorphous sarcoma developed near the capsule. This tumor was successfully transplanted in 16 generations and, thus, a new strain of transplanted rat sarcoma, call by us KCh [Kogan-Chechulin], was created. The percentage of takes in all generations, beginning with the 2nd, comprised 80-100% for the young rats and 50-84% for the old. The length of life after tumor inoculations varied in young and adult rats, from 25 days to 10 weeks. Survival for old rats was considerably longer, with a maximum of 3 1/2 - 4 months. In almost 50% of the cases the tumor matched body weight and often exceeded it. No metastases were produced. Tumor growth was attended by development of cachexia. In a number of cases ulceration of the tumor was noted; at transplantation into the abdominal cavity development of ascites was occasionally observed. In the 1st generation, in distinction from the initial polymorphous sarcoma, the tumor assumed the structure of a spindle-cell sarcoma, but in the 5th and 13th generation it again acquired the structure of the polymorphous sarcoma. (Author)

Koltover, A. N., Lyudkovskaya, I. G., and Vereshchagin, N. V.
THE PATHOGENESIS AND MORPHOLOGY OF CEREBROVASCULAR DISTURBANCES DUE TO LESIONS OF THE CAROTID AND VERTEBRAL ARTERIES. [1963] [16]p. (figs. omitted) 28 refs. FASEB manuscript no. S 189-2.
Order from OTS or SLA $1.60 63-19380
figs: available on loan from OTS

Trans. of Arkhiv Patologii (USSR) 1962, v. 24, no. 8, p. 18-26.

DESCRIPTORS: Pathology, Etiology, Morphology, Blood vessels, *Brain, *Arteries,

Various forms of lesions of the carotid and vertebral arteries are found in more than half the number of persons dying from cerebrovascular disturbances. Combined lesions of the carotid and vertebral arteries often occur, in the form of thrombosis and stenosis. The commonest cause of these lesions is atherosclerosis. In association with changes in the extracranial portion of the carotid and vertebral arteries, foci of cerebral softening develop, mainly in the zones of mixed blood supply in the hemisphere corresponding to the side of the affected artery. Disturbances of the cerebral circulation associated with a lesion of the extracranial portion of the main arterial trunks frequently have a course typical of cerebrovascular insufficiency. A

special place in the mechanism of the cerebrovascular disturbances is occupied by pathological kinking of the carotid and vertebral arteries, which may be the cause of development of foci of cerebral ischemia, followed by massive hemorrhage into the ischemic tissue. (Author)

Krasil'nikov, A. P. and Izraitel', N. A.
EXPERIMENTAL ANTHRAX INFECTION IN IRRADIATED ANIMALS. 3 Apr 63 [10]p. 10 refs.
ABL Trans. no. 769; JPRS: R-3049-D.
Order from OTS or SLA $1.10 63-19555

Trans. of Meditsinskaya Radiologiya (USSR) 1959, v. 4 no. 6, p. 56-60.
Another trans. is available from OTS or SLA $1.10 as 59-31016, JPRS(DC)-L-1904, 14 Oct 59, 8p.

DESCRIPTORS: *Bacillus anthracis, Diseases, *Anthrax, *Radiation effects, Animals, *Radiation sickness, Dosage, Adaptation (Physiology).

Kulagin, S. M., Fedorova, N. I., and Ketiladze, E. S.
LABORATORY OUTBREAK OF HEMORRHAGIC FEVER WITH A RENAL SYNDROME (CLINICO-EPIDEMIOLOGICAL CHARACTERISTICS) tr. by Charles T. Ostertag, Jr. Feb 63 [13]p. 19 refs. ABL Trans. no. 737.
Order from OTS or SLA $1.60 63-19552

Trans. of #[Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii] (USSR) 1962, v. 33, no. 10, p. 121-126.
Another trans. is available from OTS or SLA $1.60 as 63-19106, 5 Apr 63, 18p.

DESCRIPTORS: Communicable diseases, *Nephritis, Etiology, Epidemiology, *Fevers, Disease vectors, Rodents, Immunity, *Virus diseases, Diseases, *Hemorrhage.

It has been established that people are highly susceptible to the virus of hemorrhagic fever with a renal syndrome, as evidenced by the illness of 89.6% of the personnel working constantly in the contaminated premises, and 42% of the personnel who visited the premises 1-3 times. In 32 cases it was possible to establish accurately the duration of the incubation period, which consisted on the average of 20.4 days with a variation of 14-32 days. It confirms the idea about immunity to the disease in those who previously have had it: 5 workers of those working constantly in the infected area had this disease previously (1-3 years ago) and didn't become ill during the present outbreak. (Author)

Matveev, K. and Gannushkin, M.
BOTULISM. 27 Nov 62 [29]p. 10 refs. ABL Trans. no. 687; JPRS: R-2909-D; AD-293 897.
Order from OTS or SLA $2.60 63-19237

Trans. of Bol'shaya Meditsinskaya Entsiklopediya (USSR) [1958] v. 4, p. 266-287.
Another trans. is available from LC or SLA mi$2.70, ph$4.80 as 59-13287, JPRS(NY)-1339, 13 Mar 59, 22p.

DESCRIPTORS: *Botulism, *Clostridium botulinum, *Food poisoning, Preservation, Food, Etiology, Immunology, Diagnosis, Epidemiology, Animals.

A general survey of the disease including information on its etiology, epidemiology, pathogenesis, pathological anatomy, immunology, clinical picture, differential diagnosis, complications, treatment, prophylaxis, and occurrence in animals.

Shchupakov, N. N.
PROPHYLAXIS AND TREATMENT OF CAISSON DISEASE: SELECTED PORTIONS. 6 June 63, 7p.
JPRS: 19590.
Order from OTS $2.00 63-31000

Trans. of mono. Profilaktika i Lechenie Kessonnoi Bolezni, Moscow, 1962, p. 2-19, 75-83, 118-171, 186.

DESCRIPTORS: Inhibition, Therapy, *Decompression sickness, Construction, *Underwater equipment, *Industrial equipment, Etiology, *Industrial medicine.

Contents:
Annotation
Foreword
Caisson method of construction and the area of its employment
Factors contributing to the development of caisson disease
The treatment of caisson disease
Prophylaxis of caisson disease
Medical care of caisson workers
Table of contents.

Shochan, J. and Malaskova, V.
NEW SCREENING TEST FOR THE DEMONSTRATION OF MYELOMA PARAPROTEIN IN THE SERUM. [1963] 5p. (figs. tables refs. omitted).
Order from SLA $1.10 63-14884

Trans. of Vnitrni Lekarstvi (Czechoslovakia) 1962, v. 8, p. 95-100.

DESCRIPTORS: Tests, *Blood proteins, *Cancer, Cells (Biology), *Serum albumin, *Electrophoresis, Paper chromatography, Serum, Blood plasma.

The principle of the method consists in the staining of myeloma paraprotein along with the other albumin fractions by a saturated alcoholic solution of picric acid after the separation of serum by paper electrophoresis. Using this method, 15 patients were investigated whose illness was diagnosed as plasmocytoma.

Skrynnik, A. N. and Ryzhkov, N. V.
EXPERIMENTAL INVESTIGATION OF DERMACENTOR SILVARUM TICKS AS CARRIERS OF VERNAL ENCEPHALITIS VIRUS. 13 Dec 62 [6]p.
ABL Trans. no. 704; JPRS: R-2925-D; AD-293 481.
Order from OTS or SLA $1.10 63-19231

Trans. of Russian mono. All-Union Conference of Microbiologists and Epidermiologists, Jan 39. [Proceedings] p. 318-320.

DESCRIPTORS: *Ticks, *Disease vectors, *Encephalitis virus, Virus diseases, *Genetics.

In the investigated focus of vernal encephalitis, in addition to other Ixodic ticks, the Dermacentor silvarum tick was encountered rather frequently. The possibility has been established that the virus can be retained in the body of experimentally infected adult ticks up to 28 days; moreover this time period is not a maximum one. The possibility has been proven that virus can be transmitted from one generation of ticks to another (transovarial transmission). Ticks infected in the larval and nymphal stage retain the virus for the course of the whole metamorphosis through the adult stage. We observed virus retention for longer than five months, in development from larva to imago. Nymphs and adult ticks, experimentally infected in the preceding metamorphic stage, transmitted the virus by bite. Within experimental conditions, the Dermacentor silvarum is a good carrier of the vernal encephalitic virus, and apparently plays a definite role in the circulation of the virus in nature. (Author)

Pharmacology and Toxicology

PROCESS FOR PREPARATION OF 7-DEHYDROCHOLESTEROL AND ESTERS THEREOF. [1963] 6p. 1 ref.
Order from OTS or SLA $1.10 63-14361

Trans. of Dutch patent application 123,072, n.d.

DESCRIPTORS: *Vitamins, Steroids, *Cholesterol, Esters, Benzoates, Synthesis (Chemistry), Molecular isomerism, Organic solvents, Alcohols, Nitrogen compounds, Acids, Absorption.

The invention has as its object the preparation of provitamins from isodehydrocholesterol by conversion of such by-products into 7-dehydrocholesterol. This conversion may be effected by submitting the crystalline by-product to thermal rearrangement. It was found that this simple method causes isomerization of isodehydrocholesterol into normal provitamin D. (Author)

PROCESS FOR PREPARATION OF A VITAMIN-CONTAINING PRODUCT FROM TUNNY LIVER OIL. [1963] 3p. 1 ref.
Order from OTS or SLA $1.10 63-14363

Trans. of Dutch pat[ent] 37, 919 [1936].

DESCRIPTORS: Biological products, *Fish oils, Tuna, Livers, *Vitamins, Preparation, Alkali metal compounds, Potassium compounds, Hydroxides, Separation, Solvents.

Based on the invention, the crude tunny liver oil can be converted to a light, fluid, pleasant-smelling liquid of not unpleasant taste by mixing it with aqueous of dilute alcoholic alkali in the cold, stirring and separating aqueous from oily layers by extraction with ether or other solvents. Best results are obtained when sufficient alkali is used so that an excess remains after stirring. (Author)

Braun, O. H.
MODERN THERAPY IN INFANTILE ENTERITIS (Moderne Therapie der Säuglingsenteritis). [1963] 13p. 53 refs.
Order from SLA $1.60 63-14766

Trans. of Deut[sche] Med[izinische] Wochenschr[ift] (West Germany) 1961, v. 86, p. 1596-1599.

DESCRIPTORS: Therapy, *Infants, Diseases, Intestines, *Escherichia, Drugs, Antibiotics, *Colimycin.

Most infantile enteritis is of infectious nature. The most common causal microorganisms are to be considered the entcropathogenic coli types (dyspepsia coli bacteria), whose distribution over the entire earth is ubiquitous. In Germany about 30 to 40% of all infantile enteritis is caused by dyspepsia coli bacteria. Transfer takes place by infection through greasy dirt and with air dust. Hospital infections are thus predominantly involved. Rarer causal organisms include certain viruses in addition to organisms of the Salmonella and Shigella group. Part of the infantile enteritis cases appear in the course of parenteral infections (secondary enteritis). Dietetic treatment, which is described in detail, still plays a leading part in therapy. Medicamentous therapy is predominantly done with antibiotics directed against intestinal infection. As a result of increasing resistance of dispepsia coli bacteria to the hitherto usual antibiotics, Polymyxin B and Colistin have especially been used in recent times. In severe cases, parenteral liquid replacement and correction of electrolytic displacements must be considered. The application of corticoids and hibernation agents is occasionally resorted to; however, this can only take place under strict clinical control since they are not without objections in all cases. Finally, prophylaxis of coli enteritis is gone into. (Author)

Bütikofer, E., Cottier, P. and others.
RATE OF ELIMINATION OF GLUTETHIMIDE (DORIDEN) AND THE NATURE OF THE EXCRETION PRODUCTS IN MAN (Uber die Eliminierungsgeschwindigkeit von Glutethimid (Doriden) und die Natur der Ausscheidungsprodukte beim Menschen). Feb 63, 16p. 19 refs.
Order from SLA $1.60 63-14719

Trans. of Naunyn-Schmiedeberg's Archiv [für] Exp[erimentelle] Path[ologie] U[nd] Pharmak[ologie] (West Germany) 1962, v. 244, p. 97-108.

DESCRIPTORS: *Doriden, Drugs, Hypnotics and sedatives, *Excretion, Urine, Absorption, *Metabolic products.

By means of radioactive tagging, the metabolic behavior of Doriden in man was studied. Doriden is rapidly absorbed and excreted in the urine practically quantitatively in the form of water-soluble, pharmacologically inactive glucuronides within a short time. The glucuronides are identical with those in dog experiments, in which the chemical structure and pharmacological properties of these Doriden derivatives were examined after isolation. Determination of the biological half-life as to inactivation of the substance showed 10 hours, and 16 hours in regard to the renal excretion of the metabolites. The first value was defined as the effective and the second as maximal half-life. (Author)

Caujolle, Fernand and Meynier, Denise.
PHARMACODYNAMICS: ABOUT THE TOXICITY OF PHTHALIC ACID. [1963] 2p. 2 refs.
Order from SLA $1.10 63-14873

Trans. of [Academie des Sciences, Paris]. Compt[es] Rend[us] (France) 1958, v. 246, p. 851-852 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Phthalic acids, Toxicity, *Benzoic acids, Mice.

Faul, R. and Braun, O. H.
COLISTIN IN PEDIATRICS. [1963] 13p. 15 refs.
Order from SLA $1.60 63-14772

Trans. of Monats]schr]ift f[ür] Kinderheilk[unde] (West Germany) 1961, v. 109 [no. 11] p. 477-481.

DESCRIPTORS: *Colimycin, Pediatrics, Drugs, Antibiotics, *Enterobacteriaceae, *Influenza virus, *Encephalitis.

The application of new coli-effective antibiotics is urgently necessary because of increasing resistance of known pathogenic coli types. Such an antibiotic is Colistin, discovered in 1949, which can be used both orally and parenterally. Treatment results are presented in 124 cases of infantile enteritis, 87% of which obtained clinical recovery. Relapses occurred in 30% of the cases and 30% germ carriers were likewise determined after the treatment of coli infections. Colistin can be recommended as a clinically well effective antibiotic in enteritis treatment in infants. It is also suitable for the treatment of coli pyurias in children. It was possible to obtain very good treatment results in 3 young children with influenza meningitis, to be sure in combination with chloramphenicol and sulfonamides. (Author)

Hanssler, H.
THE RESISTANCE TO ANTIBIOTICS OF PATHOGENIC COLI STRAINS (Die Antibiotika-Resistenz Pathogener Colistämme). [1963] 13p. 17 refs.
Order from SLA $1.60 63-14767

Trans. of Deutsch[e] Med[izinische] Wochschr[ift] (West Germany) 1961, v. 86, p. 1517-1521.

DESCRIPTORS: *Tolerances (Physiology), *Antibiotics, *Escherichia, Polymyxins, Drugs, Penicillins, Infections Intestines, Therapy, Infants.

A clinical report is given on a highly virulent antibiotic-resistant institution infection with dyspepsia coli which was chiefly caused by type O111B4. Out of 202 stricken infants (135 of them confirmed bacteriologically), 19 children died (=9.5%). The high mortality was especially conditioned by the large proportion of premature infants (24.3% mortality). After extensive use of the combination preparation Inacil, which contains Novobiocin and penicillin V, the mortality could be considerably reduced; the disease course was substantially reduced by Inacil. The side effects of the preparation were slight. A substantial disadvantage of the therapy lay in the tendency to slight relapses 8 to 10 days after the antibiotic therapy was ended. On the other hand, a positive evaluation is to be given on the favorable effect on excretion of coli microorganisms; 80.7% of the stools investigated became bacteriologically negative under Inacil. Experience with Colistin and polymyxin B are still slight, but for the present more favorable results than with Inacil are not to be evaluated. (Author)

Harm, Helga.
THE INFLUENCE OF TRYPANBLUE ON THE DESCENDANTS OF PREGNANT RABBITS (Der Einfluss von Trypanblau auf Nachkommeschaft Trächtiger Kaninchen). [1963] 7p. 9 refs.
Order from SLA $1.10 63-16486

Trans. of Zeit[schrift] f[ür] Naturforschung (West Germany) 1954, v. 9B, p. 536-540.

DESCRIPTORS: *Rabbits, *Pregnancy, *Dyes, Injection (Medicine), *Germicides, Antimalarials, Trypanosoma.

Huisman and Smit.
PROCESS FOR THE PREPARATION OF ACID HALIDES FROM PRIMARY ALCOHOLS OF THE VITAMIN A SERIES. [1963] 7p. 9 refs.
Order from OTS or SLA $1.10 63-14365

Trans. of Dutch [patent] 81,350, by Philips, issued 15 June 56.

DESCRIPTORS: *Vitamin A, Hydroxides, Dehydration, Halogenation, *Acids, *Halides, Alcohols, Synthesis (Chemistry), Solvents, Benzenes, Toluenes, Xylenes.

It was found that by forming acid halides of certain hydroxy acids of the vitamin A series, dehydration can be so conducted that ultimately exclusively, or almost exclusively, normal acid halides are formed and none or hardly any of the iso acid halides arise although the formation of a mixture of isomers as an intermediate is not precluded. The normal acid halides so-prepared may be converted to the corresponding alcohols by conventional methods. (Author)

Linzenmeier, G., Scheppe, K., and Schuster, W.
COLISTIN IN INFANTILE ENTERITIS DUE TO E. COLI 0 114 (Colistin bei Sauglings-Enteritis durch E. Coli 0 114). [1963] 10p. 24 refs.
Order from SLA $1.10 63-14773

Trans. of Deut[sche] Med[izinische] W[ochenschrift] (West Germany) 1962, v. 87, no. 5, p. 246-249.

DESCRIPTORS: *Colimycin, *Infants, Diseases, *Intestines, Antibiotics, Drugs, *Escherichia.

Colistin proved effective at a dosage higher than usual (500,000 U/kg/day). Lethal outcomes were not observed among the 89 infants. The value of Colistin in this new epidemiological situation is not reduced by the fact that it does not act as rapidly or as certainly as was the case with neomycin especially against the classic enteropathogenic coli types. (Author)

Lyublina, E. I.
DETERMINATION OF PRELIMINARY MAXIMUM PERMISSIBLE CONCENTRATIONS (BY CALCULATION) OF ORGANIC SUBSTANCES IN THE AIR OF WORK PREMISES. [1962] 6p. 6 refs.
Order from OTS or SLA $1.10 AEC-tr-4978

Trans. of Gigiena i Sanitariya (USSR) 1960, v. 25, no. 12, p. 20-25.

DESCRIPTORS: *Organic compounds, *Toxicity, *Atmosphere, Industrial medicine, Safety

In those cases where a rough figure for the maximum permissible concentration of a substance newly introduced into production is required immediately the order of magnitude of that concentration can be calculated from the lethal concentrations for white mice, using the formula: $1g\ C = 0.8\ 1g\ LC_{50} - 2.54$. When no experimental data are available at all, an even more approximate calculation of the maximum permissible concentration may be made by using the boiling point and the following formula: $1g\ C = -0.005\ t^{\circ}C$ (boiling point) - 1.1. The difference between the results of the two calculations given above is an indication of the significance of the organic substance's specific toxicity. (Author)

Mayer, Andre and Vlies, Fred.
TOXICOLOGY: POISONING BY THE NITRO-HALO-METHANES. [1963] 2p.
Order from SLA $1.10 63-14632

Trans. of [Academie des Sciences, Paris]. Compt[es] Rend[us] (France) 1920, v. 171, p. 1396-1397 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: Toxicology, *Poisoning, *Nitrogen compounds, *Halogen compounds, *Methanes, Lungs, Edema, Blood.

Mikhailovskaya, A. A.
THE BIOLOGY AND FISHERY OF THE GULF OF ONEGA HERRING. 1962 [19]p. (figs. omitted) 11 refs [DSIR] NLL M.3911.
Order from OTS or SLA $1.60 63-15228

Trans. of [Materialy po Kompleksnomu Izucheniyu Belogo Morya] (USSR) 1957, v. 1, p. 74-89.

DESCRIPTORS: Marine biology, *Fishes, *Herring Taxonomy, Growth, Ecology.

Topics include: The taxonomic aspect and the basic periods in the life cycle of the small herring of the Gulf of Onega; a brief survey of the herring fishing seasons of 1951 and 1952 along the Pomorskii Coast and the biological characteristics of the composition of the spawning populations of herring; and, dynamics of the numerical strength and evaluation of the state of the supplies of herring.

Sous, H., Löschner, H. and others.
EXPERIMENTAL INVESTIGATIONS ON THE ANTIBIOTIC COLISTIN (Experimentelle Untersuchungen über das Antibioticum Colistin). [1963] 18p. 29 refs.
Order from SLA $1.60 63-14769

Trans. of Arzneimittel-Forschung (West Germany) 1961, v. 11 [no. 4] p. 395-400.

DESCRIPTORS: *Antibiotics, Drugs, *Colimycin, Chemotherapeutic agents, Drugs, Toxicity, Stability, *Tolerances

Tuchmann-Duplessis, M. H. and Mercier-Parot, L.
INFLUENCE OF INCREASING DOSES OF GLUTÉTHIMIDE (DORIDEN) ON PREGNANCY AND FETAL DEVELOPMENT OF RABBITS (Influence de Doses Croissantes de Glutéthimide (Doridène) sur la Gestation et le Development Foetal du Lapin). Feb 63, 1p.
Order from SLA $1.10 63-14720

Trans. of [la] Presse Méd[icale] (France) 1963, v. 71, 26 Jan, p. 199.

DESCRIPTORS: *Doriden, Dosage, Drugs, Pregnancy, Rabbits, *Embryoes, Growth, *Anomalies, *Hypnotics and sedatives.

The existence of a certain chemical analogy between thalidomide (α-phtalimido-glutarimide) and Doriden or glutethimide (α-phenyl-α-ethyl-glutarimide) suggested the thought that this latter could also exert damaging effects on the offspring. Experiments conducted on rabbits, a species which had proven to be particularly sensitive to the teratogenic action of thalidomide show that Doriden can disturb the course of pregnancy but does not cause any malformations. Daily doses, 10 or 20 times greater than those used in therapy, produce 15-30% fetal reabsorptions. With doses 30-50 times greater than those recommended clinically the percentage of abortions increases and can reach 80% but the surviving fetuses are normal. These observations show that unlike thalidomide, Doriden has no teratogenic action in rabbits. The reasons for the differences in action of these 2 hypnotics on offspring are still obscure. Nevertheless the different routes of disintegration, oxidation with Doriden, hydrolysis with thalidomide, suggest that the teratogenic action may depend on certain metabolites rather than on the substances themselves. (Report quoted in its entirety)

Weingärtner, L.
A NEW ANTIBIOTIC, COLISTIN, IN THE TREATMENT OF INFANTILE DISORDERS. [1963] 9p. 14 refs.
Order from SLA $1.10 63-14765

Trans. of Münchener Medizinische Wochenschrift (West Germany) 1961, v. 103, p. 1628-1631.

DESCRIPTORS: Antibiotics, *Colimycin, *Infants, Pediatrics, Infections, Drugs, Toxicity, Intestines.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 204. (CHEMISTRY SERIES). 11 June 63, 7p. JPRS: 19642.
Order from OTS $0.50 63-31026

Abstract trans. of Revista de Chimie (Rumania) 1963, v. 14, no. 1, p. 1-50.

DESCRIPTORS: *Abstracts, Bibliographies, *Chemistry, Fertilizers, *Polymers, *Chemical engineering, *Pharmacology, Organic compounds, Towers (Chemistry), Spectroscopy, Hormones, Drugs, Chemical analysis.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 206 (CHEMISTRY SERIES). 11 June 63, 5p. JPRS: 19652.
Order from OTS $0.50 63-31031

Abstract trans. of Magyar Kemiai Folyoirat (Hungary) 1963, v. 69, no. 4, p. 143-189.

DESCRIPTORS: *Abstracts, Bibliographies, *Chemistry, Biochemistry, *Physical chemistry, Radiochemistry, Electrochemistry, Peroxides, Corrosion research, Chemical analysis, Catalysts, Heat transfer, Organic compounds.

Callaham, Ludmilla and Uvarov, E. B.
RUSSIAN-ENGLISH CHEMICAL AND POLYTECHNICAL DICTIONARY, 2D ED. 1963, 892p.
Order from John Wiley & Sons, Inc., 605 Third Ave., New York, 16, N. Y. $19.50

DESCRIPTORS: *Dictionaries, *Chemistry, *Chemical engineering, Documentation.

Schulten, M. A. de.
SYNTHESIS OF "HAUKSITE". [1963] 3p. 1 ref.
Order from SLA $1.10 63-14135

Trans. of Academie des Sciences [Paris]. Comptes Rendus (France) 1896, v. 123, p. 135-137 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Minerals, *Sodium compounds, *Carbonates, *Sulfates, Crystal structure, Synthesis (Chemistry).

Weldes, F.
THE ACTION OF ACIDS AND ALKALIES UPON BLEACHING EARTHS. [1962] 10p.
Order from SLA $1.10 63-10430

Trans. of Angew[andte] Chem[ie] (Germany) 1927, v. 40, 20 Jan, p. 79-[85].

DESCRIPTORS: *Bleaching, *Acids, *Alkaline earths, Bleaching agents. Chemical analysis, Soils.

THE ANALYSIS OF ALCOHOLATES. 23 Dec 48 [2]p. 1 ref.
Order from OTS or SLA $1.10 63-10971

Trans. from unidentified German mono. pub. by Alexander Wacker G. m. b. H., Munich, n. d. (PB-70388D).

DESCRIPTORS: *Metalorganic compounds, *Sodium compounds, Alcohols, *Methanols, *Ethanols, *Butanols, Salts, Chemical analysis, Volumetric analysis.

It was found that Karl Fischer's method of water determination (Z. angew. Chem. 1935, 394) could be applied advantageously to the analysis of alkali alcoholates. Excess alkali presumably reacts in the same manner as water. (Author)

Benedetti-Pichler, A.
MICRODETERMINATION OF COPPER IN WORKSHOP CUTTINGS, METALLIC OXIDES, AND BORINGS, AND COPPER ALLOYS BY MEANS OF ELECTROLYSIS. [1963] 6p. 6 refs.
Order from SLA $1.10 63-10982

Trans. of Z[eitschrift für] Anal[ytische] Chem[ie] (Germany) 1923, v. 62, p. 321-329.

DESCRIPTORS: *Copper, Microanalysis, Quantitative analysis, *Electrolysis, *Copper alloys, Metals, *Oxides

Keyser, W. L. de and Degueldre, L.
CONTRIBUTION TO THE STUDY OF THE FORMATION OF CALCITE ARAGONITE AND VATERITE. [1963] [20]p. (figs. omitted).
Order from SLA $1.60 63-14228

Trans. of article from an unidentified source, n. p., n. d.

DESCRIPTORS: *Calcite, *Calcium compounds, *Carbonates, Sodium compounds, *Chemical precipitation, Crystal structure, Electron microscopy, X-ray diffraction analysis, *Phase studies.

The precipitation of $CaCO_3$ formed at different temperatures by the addition of (aCl_2 to Na_2CO_3 (Series A) and of Na_2CO_3 to $CaCl_2$ (Series N) were studied by the optical and the electronic microscope, X-ray diffraction, and thermal analysis. It was shown that in the course of the precipitation a gel is formed from the very start and that the duration of existence of this gel depends on the temperature and the pH of the solution. (Author)

Landmark, Kare.
BORON CONTENTS IN ROCKS FROM VESTLANDET AND VEST JOTUNHEIMEN, NORWAY. [1963] 19p. (figs. omitted) 8 refs.
Order from SLA $1.60 63-14210

Trans. of Bergens Museums. Årbok. Nat. [Rekke.] (Norway) 1944, no. 5, p. 1-20.

DESCRIPTORS: *Boron, *Rock (Geology), *Norway, *Colorimetric analysis.

Leroy, R.
A CORRECT METHOD FOR DETERMINING WATER [Une Methode Correcte de l'Eau]. [1963] 18p. (figs. omitted).
Order from SLA $1.60 63-14879

Trans. of Chim[ie] Anal[ytique] (France) 1954, v. 36 [no. 11] p. 294-301.
Another trans. is available from SLA mi$2.40, ph$3.30 as 59-15290, [1959] [16]p.

DESCRIPTORS: *Water, *Test methods, Dehydration, Furnaces, Chemical bonds, Thermodynamics, Humidity, Vapor pressure, Chemical analysis.

For abstract see Technical Translations: 2: 181, 1959.

Margulis, Henri.
THE EXISTENCE OF TWO STATES OF WATER-SOLUBLE P_2O_5 IN THE SUPERPHOSPHATES. [1963] 4p.
Order from SLA $1.10 63-14586

Trans. of [Academie des Sciences, Paris]. Compt[es] Rend[us] (France) 1947, v. 225, p. 462-464 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Phosphorus compounds, *Oxides, Water, Solutions, *Calcium compounds, *Phosphates, *Sulfates, Phosphoric acids, Quantitative analysis.

Mende, Serge, de.
DETERMINATION OF DISSOCIATION CONSTANTS OF AMINO ACIDS ALONE AND AS MIXTURES. [1963] 5p. 3 refs.
Order from SLA $1.10 63-14588

Trans. of [Academie des Sciences, Paris]. Compt[es] Rend[us] (France) 1946, v. 222, p. 791-793 (pub. by Gauthier-Villars et cie., Paris).

DESCRIPTORS: *Amino acids, Mixtures, *Dissociation, Determination, Aspartic acid, *Leucine, Electrodes, Titration.

Neeb, K. H. and Gebauhr, W.
FLAME-PHOTOMETRIC DETERMINATION OF SMALL AMOUNTS OF POTASSIUM IN SODIUM AND ITS COMPOUNDS AFTER ENRICHMENT WITH AMMONIUM TETRAPHENYL BORON. 11 Jan 60, 10p. (figs. omitted) 10 refs.
Order from SLA $1.10 63-14128

Trans. of Zeitschrift [für] Anal[ytische] Chem[ie] (West Germany) 1958, v. 162, no. 3, p. 167-174.

DESCRIPTORS: *Potassium, Chemical analysis, Flames, Photometers, Sodium, *Sodium compounds, Additives, *Ammonium compounds, Phenyl radicals, *Boron compounds, Chemical precipitation, Tracer studies.

Orlov, J. E.
QUANTITATIVE SEPARATION OF MANGANATE AND PERMANGANATE. [1963] 2p. 1 ref.
Order from SLA $1.10 63-14593

Trans. of Z[eitschrift für] Anal[ytische] Chem[ie] (Germany) 1932, v. 91, p. 186-187.

DESCRIPTORS: *Quantitative analysis, *Separation, *Manganates, *Permanganates, *Barium compounds, *Chlorides, Carbonates, Hydroxides, Chemical precipitation, Potassium compounds, Iodides, Oxidation.

Ostroumov, G. V.
THE NEUTRON METHOD OF ANALYSIS FOR BORON IN SKARN ORES. 30 Jan 63 [11]p. 3 refs. FTD-TT-62-1567; AD-299 648.
Order from OTS or SLA $1.60 63-19514

Unedited rough draft trans. of Razvedka i Okhrana Nedr (USSR) 1961 [v. 27] no. 5, p. 36-40.

DESCRIPTORS: *Boron, Ores (Metal Sources), Measurement, *Neutron absorption, *Neutron capture, Chemical analysis, *Boron compounds, *Neutron reactions, Neutron cross sections, Neutrons detectors, Radiation chemistry.

Ruff, Otto and Thomas, Frit.
BEHAVIOR OF NIOBIUM-- AND TANTALUM--5--OXIDES IN THE PRESENCE OF CARBON TETRACHLORIDE AND A METHOD FOR THE ANALYTIC DETERMINATION OF NIOBIUM AND TANTALUM. [1963] 15p. 10 refs.
Order from SLA $1.60 63-14131

Trans. of Zeitschrift für Anorganische und Allgemeine Chemie (Germany) 1926, v. 156, p. 213-225.

DESCRIPTORS: *Niobium compounds, *Tantalum compounds, *Oxides, *Carbon tetrachloride, Chemical analysis, Determination, Chlorides, Purification, Quantitative analysis, Reduction (Chemistry).

Ryasnyanskaya, A. G.
DETECTING ELEMENTAL SULFUR IN REACTIVE FUELS. 12 Feb 63 [8]p. FTD-TT-62-1451; AD-298 661.
Order from OTS or SLA $1.10 63-19262

Unedited rough draft trans. of mono. Khimiya Seraorganicheskikh Soyedinenii, Soderzhaschikhsya v Neftyakh i Nefteproduktakh [Chemistry of Organic Sulfur Compounds in Crudes and Petroleum Products] v. 4, Akademiya Nauk SSSR, Bashkirskii Filial, 1961, p. 71-74.

DESCRIPTORS: *Sulfur, *Jet engine fuels, Volumetric analysis, Mixtures, Impurities.

The essence of the volumetric method of detecting elemental sulfur in jet fuels consists in direct titration of a suspension of fuel of 0.003-0.004 N in a solution of caustic soda in isopropyl alcohol. Titration takes place in a water and acetone medium while being heated in the

presence of an acid base indicator, bromcresol purple. Under the conditions of the experiment the elemental sulfur reacts qualitatively with the caustic soda. The investigation established that the reaction of the elemental sulfur with the caustic soda is accompanied by the formation of sodium sulfide and sodium thiosulfate which do not hydrolize in the medium in question. A small excess of caustic soda is revealed by the change in the color of the indicator. (Author)

Simon, A. and Steger, E.
THE MICRO-CHEMICAL IDENTIFICATION OF CONDENSED PHOSPHATES. [1963] 2p. 3 refs.
Order from SLA $1.10 63-16481

Trans. of die Naturwissenschaften (West Germany) 1955, v. 42, no. 22, p. 604-605.

DESCRIPTORS: *Phosphates, Chemical precipitation, Microanalysis.

Sinyakova, S. I. and Glinkina, M. I.
UTILISATION DES COMPLEXONS EN POLAROGRAPHIE. COMMUNICATION 2. COMPORTEMENT DU MOLYBDÈNE À L'ÉLECTRODE À GOUTTES DE MERCURE EN PRÉSENCE D'UN EXCÈS DE COMPLEXONS (Primenenie Kompleksonov v Polyarografii. Soobshchenie 2. Povedenie Molibdena na Rtutnom Kapel'nom Elektrode na Fone Komepleksonov) [The Use of Complexions in Polarography. Pt. 2. The Behavior of Molybdenum on the Dropping Mercury Electrode in a Supporting Electrolyte of Complexions]. 24 Mar 62 [22]p. (foreign text included) 13 refs. CEA Trans. no. R 1562.
Order from OTS or SLA $2.60 63-15496

Trans. in French of #Zh[urnal] Anal[iticheskoi] Khim[ii] (USSR) 1958, v. 13, no. 2, p. 186-192.

DESCRIPTORS: *Molybdenum, Reduction (Chemical), *Polarographic analysis, *Mercury electrodes, *Complex compounds, Acetic acids, Amines, Ions, Iron, Copper, Lead, Zinc, Vanadium, Tungsten.
The reduction of molybdenum on a dropping mercury cathode has been studied in the presence of complexone I, complexone III, benzohydrylaminoacetic, hexamethylendiaminetetraacetic and cyclohexanediaminetetraacetic acids. In all those cases molybdenum has been found to reduce in acid solutions. The values of half-wave potentials and diffusion currents depend greatly on the pH value. In alkaline solutions the molybdenum reduction wave is not formed. It has been shown that the best results for analytical purposes can be achieved with complexone III. In the presence of complexone III Fe^{III} and Cu^{II} ions decrease the limiting molybdenum current ions of Pb, Zn, V and W practically do not interfere (Author)

Volunets, M. I. and Bernshtein, S. S.
A RAPID METHOD FOR THE DETERMINATION OF SILICA BY AID OF HYDROXYQUINOLINE IN QUARTZITES, DINAS BRICKS, GROG MATERIALS AND CLAYS. [1963] 6p.
Order from OTS or SLA $1.10 63-16159

Trans. of Zavodskaya Laboratoriya (USSR) 1936, v. 5, no. 9, p. 1071-1072.

DESCRIPTORS: *Silicon compounds, *Dioxides, *Quinolinol, Bromination, Melting, Chemical analysis, Refractory materials.

Yokosuka.
THE COLORIMETRIC DETERMINATION OF SMALL AMOUNTS OF PHOSPHORUS AND ARSENIC IN COPPER METAL BY FRACTIONAL EXTRACTION METHOD. [1963] 14p. (figs. tables omitted) 7 refs
Order from SLA $1.60 63-14237

Trans. of Bunseki Kagaku (Japan) 1956, v. 5, no. 7, p. 395-398.

DESCRIPTORS: *Colorimetric analysis, *Phosphorus, *Arsenic, *Copper, Metals, Distillation, Separation.

Inorganic Chemistry

THE ACTION OF CS_2, H_2SO_4, AND HCl ON SEVERAL OXYGEN SALTS AT ELEVATED TEMPERATURES. 22 Feb 54, 2p.
Order from SLA $1.10 63-14112

Trans. of Annalen [der Physik] (Germany) 1866, v. 127, p. 430-431.

DESCRIPTORS: *Carbon compounds, *Sulfides, *Sulfuric acid, *Hydrochloric acid, *Oxides, Salts, Temperature, Potassium compounds, Chromates, Chromyl radicals, Chemical reactions, Physical properties.

SODIUM ORTHOPERIODATE, COMPLEX COMPOUNDS OF SPECIAL TYPES [AND] SYSTEMS CONTAINING ALKALI AND ALKALINE EARTH METALS. 11 Aug 49, 2p. (figs. omitted) 8 refs.
Order from OTS or SLA $1.10 63-10973

Trans. from mono. FIAT Review of German Science, 1939 to 1946, Inorganic Chemistry, pt. 3 [1948] (PB-85038).

DESCRIPTORS: *Sodium compounds, *Iodates, *Complex compounds, Fuzed materials, *Alkali metals, *Alkaline earth metals.

Ans, J. d', Busse, W., and Freund, H. E.
BASIC MAGNESIUM CHLORIDES. 16 May 55 [12]p. 11 refs.
Order from SLA $1.60 63-14625

Trans. of Kali und Steinsalz (West Germany) 1955, no. 8, p. 3-7.

DESCRIPTORS: *Magnesium compounds, *Chlorides, Solutions, *Complex compounds, Hydroxides, Oxychlorides, Solubility, Anhydrides, Synthesis (Chemistry), Chemical properties.

The solubility curves for $Mg(OH)_2$ and of $Mg(OH)_3Cl.4H_2O$ in magnesium chloride solutions were determined on the basis of a renewed study of the 20°C isotherm in the system H_2O-$Mg(OH)_2$-$MgCl_2$. The preparation of anhydrous $Mg_2(OH)_3Cl$ was investigated as well. Some of the properties of this compound are reported. (Author)

Blattner, N. G.
ON THE ACTION OF METALLIC OXIDES ON THE ALKALINE AND ALKALINE-EARTH HYPOCHLORITES. [1963] 16p.
Available on loan from SLA 63-14231

Trans. of Societe Chimique du Nord de la France. Bulletin, 1892 [v. 2] p. 58-84.

DESCRIPTORS: *Metallic compounds, Cobalt compounds, Iron compounds, Manganese compounds, Lead compounds, Copper compounds, Zinc compounds, Nickel compounds, Oxides, *Alkali metal compounds, *Alkaline earth compounds, *Hypochlorites, Chemical reactions

Engle, Leonard.
HYDRAZINE: A SENSATIONAL CHEMICAL DISCOVERY. [1963] 5p.
Order from SLA $1.10 63-14022

Trans. of Prakt[ische] Chem[ie] (Austria) 1952, v. 3, no. 3, p. 56-58.

DESCRIPTORS: *Hydrazines, *Hydrazine derivatives, Rocket propellants, Metal coatings, Germicides, Growth substances.

Hieber, W.
THE PRESENT STATUS OF THE CHEMISTRY OF THE METAL CARBONYLS. V. GENERAL QUESTIONS OF VALENCE AND STRUCTURE. VI. THE METAL CARBONYLS IN THE PERIODIC SYSTEM. [1963] 26p. 47 refs.
Order from SLA $2.60 63-14000

Trans. of die Chemie (Germany) 1942, v. 55, no. 3/4, p. 24-28.

DESCRIPTORS: *Complex compounds, *Metallic compounds, *Carbonyl radicals, Chemistry, Valence, Molecular structure, Theory, Chemical properties, Periodic variations.

(See also 63-10984)

Lely, D. and Hamburger, L.
PREPARATION OF THE ELEMENTS THORIUM, URANIUM, ZIRCONIUM AND TITANIUM. [1963] 11p. (figs. omitted 9 refs.
Order from SLA $1.60 63-14303

Partial trans. of [Zeitschrift fûr Anorganische und Allgemeine Chemie] (Germany) 1914, v. 87, p. 209-228.

DESCRIPTORS: *Thorium, *Uranium, *Zirconium, *Titanium, *Chlorides, Sodium compounds, Reduction (Chemistry), Purification, Chemical reactions.

Lux, Hermann and Illmann, Günther.
KNOWLEDGE ABOUT CHROM(II)- SALTS AND CHROMIUM (II) OXIDE [REPT.] II. [1963] 12p. 19 refs.
Order from SLA $1.60 63-14224

Trans. of Chemische Berichte (West Germany) 1959, v. 92, no. 9, p. 2364-2371.

DESCRIPTORS: *Chromium compounds, *Oxides, Synthesis (Chemistry), Mercury alloys, Salts, Oxalates, Formates, Carbonyl radicals, Decomposition, Hydroxides, Dehydration, Solubility, Crystal structure.

The products obtainable by the oxidation of chromium amalgam and described in the older literature as chromium (II) oxide are amorphous under x-ray, indefinite in their composition and always contain considerable mercury. They should be deleted from the literature as chromium (II) oxide. The thermic decomposition of chromium (II) oxalate and chromium (II) formate in a high vacuum at temperatures up to 800° leads to residues with the composition $CrO_{1.5-1.32}$. Careful drying of $Cr(OH)_2$ gives a product with the composition $CrO_{1.08} \cdot 0.33\ H_2O$, which on further heating gives off more hydrogen. Chromium (II) oxide results, however, when chromium hexacarbonyl is decomposed in a high vacuum at 250 to 550°C. This product is insoluble in boiling concentrated HCl or hot conc. sulfuric acid and shows in the powder diagram only the lines of the rock salt lattice with an identity period of 4.12 Å, which almost coincides with that of the likewise cubic CrN. Above 700°, the substance decomposes quickly with disproportioning. (Author)

Nikolaev, N. S., Ivanov, N. A., and Koltypin, S. G.
SODIUM SILICOFLUORIDE AND ALUMINUM FLUORIDE AND THEIR SOLUBILITY IN WATER AND IN HYDROFLUORIC ACID. [1963] 16p. 8 refs.
Order from OTS or SLA $1.60 63-14618

Trans. of [Zhurnal Prikladnoi Khimii] (USSR) 1936, v. 9, p. 1183-1190.

DESCRIPTORS: *Sodium compounds, *Fluorides, *Silicates, Solubility, Water, Acids, Aluminum compounds, Temperature, Statistical data.

The work described showed that with increase of temperature and HF concentration in the solvent the solubilities of both Na_2SiF_6 and $Al_2F_6.5H_20$ increase. The composition of the aluminum fluoride corresponding to the ordinary method by which it is produced was established. This composition is $Al_2F_6.5H_20$. Investigations were conducted on the drying of this aluminum fluoride, and the drying temperature of 300° was decided upon. (Author)

Nikolaev, V. I. and Petrova, E. M.
OBTAINING BROMINE FROM SYLVINITE MOTHER LIQUORS. [1963] 5p. 1 ref.
Order from OTS or SLA $1.10 63-14592

Trans. of Kalii (USSR) 1935, no. 8, p. 18-19.

DESCRIPTORS: *Bromine, Preparation, *Potassium compounds, Oxides, Chlorides, Bromides, Solutions.

For abstract see chemical abstracts 30:1188, 1936.

Petersen, Theodor.
PENTAHYDRATE OF SODIUM METASILICATE $NA_2O\ SiO_2\text{-}5H_2O$. [1963] [3]p. [figs. omitted] 4 refs.
Order from SLA $1.10 63-14211

Trans. (partially in manuscript) of [Chemische Berichte] (Germany) 1872, v. 5, p. 409-410.

DESCRIPTORS: *Sodium compounds, *Silicates, Hydrates, Crystal structure, Chemical properties.

Ruff, Otto and Brintzinger, Herbert.
REDUCTION OF THORIUM, ZIRCONIUM, AND TITANIUM DIOXIDES. [1963] 12p. (fig. omitted) 56 refs.
Order from SLA $1.60 63-14304

Trans. of Z[eitschrigt fűr] Anorg[anische] u[nd] Allg[emeine] Chem[ie] (Germany) 1923, v. 129, p. 267-275.

DESCRIPTORS: *Thorium compounds, *Zirconium compounds, *Titanium compounds, *Dioxides, *Reduction (Chemistry), *Chlorides, Sodium, Calcium, Alcohols.

Sandonnini, G.
THE LEAD OXYHALIDES. 2 Apr 47 [8]p. (figs. omitted) 12 refs.
Order from SLA $1.10 63-14308

Trans. of Accad[emia Nazionale dei] Lincei. [Classe di Science Fiziche, Matematiche e Naturali. Rendiconti] (Italy) 1914, ser. 5, v. 23, p. 959-965.

DESCRIPTORS: *Lead compounds, *Oxyhalides, Fused materials, *Oxides, Crystallization, Physical properties, High-temperature research.

Schafer, Harald and Bayer, Lisel.
CHEMISTRY OF THE ELEMENTS NIOBIUM AND TANTALUM. XIII. SATURATION PRESSURES OVER SOLID NIOBIUM (IV) CHLORIDE. [1963] 7p. (figs. tables omitted) 10 refs.
Order from SLA $1.10 63-14132

Trans. of Zeitschrift fűr Anorganische und Allgemeine Chemie (East Germany) 1954, v. 277, p. 140-145.

DESCRIPTORS: Niobium, Tantalum, *Niobium compounds, *Chlorides, Phase studies, Solids, *Vapor pressure, Cooling, Decomposition.

The saturation pressure over solid niobium (IV) chloride was determined by a rapid cooling method. The tetrachloride precipitate resulted directly in the reaction chamber from metallic niobium and niobium (V) chloride. During the measurements the $NbCl_5$ was great enough so that the decomposition of the tetrachloride into trichloride and pentachloride was suppressed. For the saturation pressure of the solid $NbCl_4$ was given: $\log P_{mm} = 12.30 - 6.87 \cdot 10^3/T$. (Author) (See also 61-25133)

Shchukarev, S. A., Kolbin, N. I., and Ryabov, A. N.
ANHYDROUS RUTHENIUM TRIBROMIDE. [1962] [7]p. 8 refs.
Order from OTS or SLA $1.10 63-13401

Trans. of Leningrad U. Vestnik (USSR) 1961, v. 16, no. 4, Ser[iya] Fiz[ika] i Khim[ii] no. 1, p. 100-104.

DESCRIPTORS: *Ruthenium compounds, *Bromides, Anhydrides, Synthesis, Physical properties, Dissociation.

Anhydrous ruthenium tribromide was prepared by directly combined ruthenium and bromine in sealed tubes at a bromine pressure of 15 to 20 atm and a temperature of 450° to 500°C. The density and the lattice plane spacing of $RuBr_3$ prepared in the dry way were determined. A study was made of the thermal dissociation of ruthenium tribromide, and the thermodynamic characteristics for the process $Ru_{sol.} + 3/2\ Br_2 = RuBr_{3\,sol.}$ were calculated from the data obtained: $\Delta F_{298} = -30(\pm 4)$ kcal; $\Delta H_{298} = -44(\pm 2)$ kcal; $\Delta S_{298} = -49(\pm 2)$ E.U. (Author)

Wiberg, E[gon] and Sturm, W[infried].
CHEMISTRY OF BORON SULFOL $(BHS)_3$ AND ITS DERIVATIVES. [1963] 31p. 15 refs.
Order from SLA $3.60 63-14201

Trans. of Angewandte Chemie (West Germany) 1955, v. 67 [no. 17/18] p. 483-493.
Another trans. is available from SLA $3.60 as 62-16761 [1962] 38p.

DESCRIPTORS: *Boron compounds, *Thiols, Chemical properties, Molecular structure, Chemical reactions.

Organic Chemistry

POLYMER SCIENCE USSR, 1962, VOL. 3, NO. 1, P. 1-210. May 62, 1v.
Order from PP $100.00/year

Trans. of Vysokomolekulyarnye Soedineniya (USSR) 1961, v. 3, no. 1, p. 10-13, 56-65, 81-83, 99-104, 134-143, 150-151, 161-163; no. 2, p. 184-204, 213-214, 232-236, 290-309; no. 3, p. 363-367, 371-381, 408-413, 420-434, 470-474. Abstracts are included of selected articles from v. 3, nos. 4-8.

DESCRIPTORS: *Polymers, Chemistry, Scientific research, Light, Scattering, *Chemical bonds, Photochemistry, *Amides, Polymerization, *Ethylenes, Radiation chemistry, *Acrylic acids, Phase studies, *Phthalates, *Styrenes, Electron bombardment, Reaction kinetics, *Esters, Morphology, *Vinyl radicals, *Acetates, *Diffusion, *Nuclear magnetic resonance, *Acrylic resins, Copolymerization, *Methanols. *Phenyl radicals, *Acetylenes, Hydrolysis, *Carboxylic acids, *Chlorides, *Cellulose, *Peroxides, *Propenes, *Degradation, *Abstracts

Consists of articles by L. Alexandru, N. M. Bazhenov, E. M. Belavtseva, K. G. Berdnikova, V. A. Kargin, Yu. Ya. Kolbovskii, G. V. Korolev, V. V. Korshak, T. E. Lipatova, L. P. Mezhirova, N. A. Plate, S. R. Rafikov, D. Rysavy, P. S. Shantarovich, A. V. Sidorovich, N. A. Slovokhotova, Z. S. Smolyan, N. S. Tsvetkov, S. S. Urazovskii, O. B. Zapol'skii

POLYMER SCIENCE USSR, 1962, VOL. 3, NO. 2, P. 211-366. Aug 62, 1v.
Order from PP $100.00/year

Trans. of Vysokomolekulyarnye Soedineniya (USSR) 1960, v. 2, no. 7, p. 989-993, 1026-1030, 1039-1048, 1082-1092, 1103-1108, 1122; no. 8, p. 1157-1161, 1167-1170, 1176-1187, 1193-1195, 1213-1220, 1280-1282, 1287; no. 9, p. 1297-1300, 1309-1319, 1360-1369, 1375-1382, 1391-1397, 1426-1431. Abstracts are included of selected articles from v. 3, no. 12 and v. 4, no. 1.

DESCRIPTORS: *Polymers, Chemistry, *Amides, Condensation reactions, *Ethylenes, Reaction kinetics, Electrical conductance, *Acrylic resins, *Benzenes, *Isoprenes, Polymerization, Copolymerization, *Radiation chemistry, *Phenyl radicals, *Acetylenes, *Acrylonitriles, *Propenes, *Phenol-formaldehyde resins, Anisotropy, Degradation, *Styrenes, *Electron microscopy, *Amines, *Bromines, *Vinyl radicals, Mechanical properties, *Silicones, *Hydrocarbons, Light, Scattering, Chemical bonds, *Methyl radicals, *Ultrasonics, *Abstracts.

Consists of articles by K. A. Andrianov, N. K. Baramboim, I. M. Barkalov, A. A. Berlin, E. Z. Fainberg, T. M. Gritsenko, L. A. Igonin, V. A. Kargin, Yu. Ya. Kol'bovskaya, V. V. Korshak, L. M. Lanovskaya, N. V. Mikhailov, A. M. Polyakova, A. G. Pozamantir, L. S. Priss, S. S. Spasskii, Yu. L. Spirin, V. N. Tsvetkov, B. Z. Volchek, E. V. Zabolotskaya.

POLYMER SCIENCE USSR, 1962, VOL. 3, NO. 3, P. 367-534. Jan 63, 1v.
Order from PP $100.00/year

Trans. of Vysokomolekulyarnye Soedineniya (USSR) 1960, v. 2, no. 10, p. 1449-1455, 1475-1480, 1486-1499, 1521-1535; no. 11, p. 1613-1634, 1645-1658, 1678-1687, 1722-1738, 1745; no. 12, p. 1811-1827, 1839-1844, 1860-1869. Abstracts are included of selected articles from v. 4, no. 2.

DESCRIPTORS: *Polymers, Chemistry, Condensation reactions, *Chlorides, *Pyrocatechol, *Acrylic resins, *Styrenes, Degradation, *Molecular spectroscopy, *Benzenes, Polymerization, Copolymerization, *Ethylenes, *Propenes, Deformation, Mechanical properties, *Butadienes, *Chemical bonds, *Glycols, *Catalysts, Anisotropy, Pressure, *Amides, *Fibers (Synthetic), *Vinyl radicals, *Ethyl ethers, *Sodium, *Synthesis (Chemistry), *Methyl radicals, *Silicones, *Abstracts

Consists of articles by V. I. Alekseenko, I. A. Alekseeva, I. V. Astaf'ev, A. A. Berlin, Yu. V. Egorova, V. E. Gul', V. A. Kargin, A. G. Kiselev, A. A. Korotkov, V. V. Korshak, M. Kucera, L. M. Lanovskaya, B. I. Kiogon'kii, E. P. Mel'nikova, I. Ya. Poddubnyi, P. Rempp, L. G. Tokareva, M. P. Vershinina, V. P. Zubov, M. P. Zverev

POLYMER SCIENCE USSR, 1962, VOL. 3, NO. 4, P. 535-758. Feb 63, 1v.
Order from PP $100.00/year

Trans. of Vysokomolekulyarnye Soedineniya (USSR) 1961, v. 3, no. 4, p. 505-520, 530-535, 541-554, 562-569, 585-593, 637-641; no. 5, p. 657-661, 679-698, 706-710, 716-723, 748-757, 787-793; no. 6, p. 801-805, 820-832, 841-846, 861-864, 870-890, 898-900, 908-918, 931-935. Abstracts are included of selected articles from v. 4, nos. 3-4.

DESCRIPTORS: *Polymers, Chemistry, Copolymerization, *Radiation chemistry, *Ethylenes, *Phthalates, *Benzoyl radicals, *Peroxides, *Ethyl radicals, *Amines, *Serum-albumin, Polymerization, *Acrylic resins, *Vinyl radicals, *Acetates, *Thio radicals, *Valeric acids, Adhesion, *Propenes, *Titanium compounds, *Chlorides, *Amides, *Styrenes, *Butenes, Molecular structure, *Acrylic acids, Crystallization, Chemical reactions, *Carbons, *Ions, *Aluminum compounds, *Silicones, *Bromides, *Heterocyclic compounds, Photochemistry, *Fluorides, *Alkyl radicals, *Oxides, *Ethanols, *Ethers, *Solvents, Photoelasticity, *Abstracts

Consists of articles by G. L. Berestneva, S. E. Bresler, Yu. E. Eizner, S. Ya. Frenkel', M. I. Frolova, V. A. Kargin, S. I. Klenin, G. S. Kolesnikov, A. A. Korotkov, O. V. Krylov, M. F. Margaritova, S. G. Matsoyan, B. M. Mikhailov, Z. A. Nudel'man, B. V. Petukhov, A. P. Sheinker, M. F. Shostakovskii, N. A. Slovokhotova, T. A. Sokolova, S. S. Spasskii, A. V. Topchiev, N. S. Tsvetkov, V. N. Tsvetkov, Yu. D. Tsvetkov, V. I. Tsvetkova, R. M. Vasenin, M. K. Yakovleva

POLYMER SCIENCE USSR, 1962, VOL. 3, NO. 5, P. 759-986. Mar 63, 1v.
Order from PP $100.00/year

Trans. of Vysokomolekulyarnye Soedineniya (USSR) 1961, v. 3, no. 7, p. 960-970, 980-983, 991-1014, 1031-1040, 1044-1061, 1072-1083, 1091-1099, 1110-1115; no. 8, p. 1135-1149, 1170-1175, 1203-1216, 1220-1223, 1238-1246; no. 9, p. 1311-1320, 1332-1346, 1352-1357, 1377-1388, 1415-1420. Abstracts are included of selected articles from v. 4, nos. 5-6.

DESCRIPTORS: *Polymers, Chemistry, *Radiation chemistry, *Styrenes, *Alcohols, *Cyanates, *Cellulose, *Nitriles, *Propenes, Surface tension, Chlorination, Sulfonation, *Benzenes, Polymerization, *Ethylenes, *Metalorganic compounds, *Vinyl radicals, *Acetals, *Acrylic resins, *Photolates, *Chlorides, *Glycols, *Methyl radicals, *Silicones, *Rubber,

*Isoprene, Photoelasticity, Surface properties, Oxidation, *Carbon, *Ions, *Acetates, *Thiophenes, Condensation reactions, *Ketones, Diffusion, X-ray diffraction analysis, *Antioxidants, *Furfurals, *Elastomers, Pyrolysis, *Maleic anhydride, *Abstracts

Consists of articles by A. D. Abkin, K. A. Andrianov, A. A. Arest-yakubovich, E. E. Baroni, S. N. Borisov, S. E. Bresler, Cheng Han-ming, S. G. Entelis, A. P. Firsov, L. S. Gal'braikh, D. E. Il'ina, V. A. Kargin, G. S. Kolesnikov, V. V. Korshak, A. S. Kuzminskii, P. I. Levin, Li Li-shen, S. G. Lyubetskii, S. G. Matsoyan, N. V. Mikhailov, V. D. Moiseev, S. F. Naumova, A. M. Polyakova, S. R. Rafikov, D. Rysavy, A. D. Slepukhovich, V. N. Tsvetkov, R. M. Vasenin

PROCESS FOR PREPARATION OF 7-DEHYDROSTEROLS. [1963] 4p. (refs. omitted).
Order from OTS or SLA $1.10 63-14364

Trans. of Belgium patent 454,113, French patent 901,551, [Netherlands] patent 61,340 (15 July 48) by N. V. Philips' Gloeilampenfabrieken.

DESCRIPTORS: *Alcohols, Preparation, *Cholesterol, Dehydration, *Amines, *Halogenation, Nitrogen, Esters, Stearates, Acetates, Chemical bonds.

PROCESS FOR THE PREPARATION OF SODIUM ACETYLENE FROM ACETYLENE AND SODIUM ETHYLATE. 7 Jan 49, 2p. 1 ref.
Order from OTS or SLA $1.10 63-10951

Trans. from unidentified German mono. pub. by Alexander Wacker G. m. b. H., Munich, n. d. (PB-70388A).

DESCRIPTORS: *Metalorganic compounds, *Sodium compounds, *Acetylenes, Synthesis (Chemistry), Ethanols, Salts, Chemical equilibrium.

No equilibrium shift
($CH \equiv CH + NaOC_2H_5 \rightleftharpoons NaC \equiv CH + C_2H_5OH$) in the direction of sodium acetylete could be obtained. The attempt to prepare sodium acetylene in this way was unsuccessful. (Author)

THIAZOLIDINE DERIVATIVES. 11 July 62, 4p.
Order from OTS or SLA $1.10 63-10832

Trans. of German patent 644,077, cl. 12p. gr. 4, by I. G. Farbenindustrie-Akt. Ges., pat. from 9 June 35, pub. of grant 1 Apr 37.

DESCRIPTORS: *Thiazoles, Imines, Xanthates, Synthesis (Chemistry).

A process is discussed for preparing thiazolidine derivatives characterized in that xanthates, other than fibrous cellulose xanthates, are treated with cyclic imines or their salts. (Author)

Akabori, Shiro and Narita, Koozoo.
MANUFACTURE OF L-GLUTAMINE. [1963] 5p. 2 refs.
Order from OTS or SLA $1.10 63-14635

Trans. of [Japanese] patent publication Showa pub. 15 Apr 53, appl. 18 Sep 51, application Showa 26-12,184 by Ajinomoto-Co.

DESCRIPTORS: Production, *Glutamine, Synthesis (Chemistry), *Glutamic acid, Alkyl radicals, *Esters, Hydrazines, Optical properties, *Methyl radicals, Crystallization, *Biochemistry.

Anglaret, Paul and Palfray, Léon.
ORGANIC CHEMISTRY: ON CERTAIN NEW ASPECTS OF THE BOUVEAULT-BLANC REACTION. [1963] 4p. 3 refs.
Order from SLA $1.10 63-14137

Trans. of Academie des Sciences [Paris]. Comptes Rendus (France) 1946, v. 223, p. 205-206. (pub. by Gauthier-Villars et Cit., Paris).

DESCRIPTORS: *Organic compounds, *Chemistry, *Alcohols, *Sodium, Esters, Chemical reactions, Reduction (Chemistry).

Aoyama, Shinjiro and Morita, Ikkan.
PREPARATION OF o-NITROANISOLE FROM o-NITROCHLOROBENZENE. [1963] 18p. (figs. omitted) 12 refs.
Order from SLA $1.60 63-14153

Trans. of Yakugaku Zasshi (Japan) 1933, v. 53, p. 622-634.

DESCRIPTORS: *Alkoxy radicals, *Nitrobenzenes, *Nitro radicals, *Chlorides, *Benzenes, Preparation, *Potassium compounds, *Hydroxides, Pressure, Chemical reactions, Statistical data

Arbuzova, I. A. and Efremova, V. N.
SYNTHESIS OF LINEAR POLYMERS OF GLYCIDYL ESTERS OF UNSATURATED ACIDS BY A CYCLIC POLYMERIZATION MECHANISM. [1962] 3p. 4 refs.
Order from OTS or SLA $1.10 62-18760

Trans. of Vysokomolekularnye Soedineniya (USSR) 1960 v. 2, no. 10, p. 1586-1587.

DESCRIPTORS: Polymers, *Acrylic acids, Methyl radicals, Ethers, Synthesis (Chemistry), Polymerization, Esters.

Damianovich, Horacio.
THE LAW OF PRODUCTION OF HELIUM BY RADIUM: RESULTS OBTAINED UP TILL NOW, AND NEW EXPERIMENTS. 28 June 61, 7p. 5 refs.
Order from SLA $1.10 63-10351

Trans. of Sociedad Cientifica Argentina. Anales, 1937, v. 124, p. 229-234.

DESCRIPTORS: Production, *Helium, *Radium compounds, Pyrolysis, Chemical analysis, Experimental data, Tests, Radioactivity, Helium group gases.

Damianovich, Horacio and Urondo, F.
HELIUM AND RADIOACTIVITY IN URANIUM MINERALS. 1. AUTUNITE AND ITS FRACTIONS. 3 Aug 61, 9p. (figs. omitted) 7 refs.
Order from SLA $1.10 63-10367

Trans. of Soc[iedad] Cient[ifica] Argentina. Anales, 1937, v. 124, p. 240-247

DESCRIPTORS: Chemical analysis, *Helium, *Radioactivity, *Uranium, *Minerals, *Fractionation, Measurement, Physical properties, Chemical properties, Natural radioactivity, Helium group gases.

Diels, Otto and Lichte, Rudolf.
NEW OBSERVATIONS IN THE PURINE AND THE CYANURIC GROUPS. 23 Jan 61, 5p. (formulae omitted) 8 refs.
Order from SLA $1.10 63-14381

Partial trans. (p. 2778-2781) of [Chemische] Ber[ichte] (Germany) 1926, v. 59, p. 2778-[2784].

DESCRIPTORS: Purines, *Cyanuric acid, *Purine alkaloids, Chemical properties, Synthesis (Chemistry) *Urea derivatives, Acetyl radicals, Methyl radicals, Thiourea.

Drozdov, N. S. and Cherntsov, O. M.
THE REACTION OF SOME SECONDARY AMINES WITH EPICHLOROHYDRIN. [1963] 10p. 19 refs,
Order from OTS or SLA $1.10 63-14558

Trans. of [Zhurnal Obshchei Khimii] (USSR) 1934, v. 4, no. 7, p. 969-974.

DESCRIPTORS: Chemical reactions, *Amines, *Halohydrins, *Chlorides, Ethyl radicals, Methyl radicals, Piperidines, Propanols, Ammonia, Polymerization.

At the condensation of diethyl--and dimethylamine and piperidine with epichlorohydrin one obtains the corresponding chloropropanol together with a small amount of products which contain the chlorine ion. These latter ones continue to be formed if the reaction mass is allowed to stand for a longer period of time. Under the influence of caustic alkali the primary product furnishes the corresponding epihydrin, and the latter one gives the corresponding aminopropanol upon heating with alcoholic ammonia. If dimethylamine is condensed with epichlorohydrin, then treatment with strong alkali results in the formation of polymerization product. (Author)

Freudenberg, Karl and Soff, Karl.
THE ACETOLYSIS OF CELLULOSE. [1963] 18p. 42 refs.
Order from SLA $1.60 63-14379

Trans. of [Chemische] Berichte (Germany) 1933, v. 66, p. 19-27.

DESCRIPTORS: *Polysaccharides, *Cellulose, Decomposition, Chemical bonds, Glucose.

Fromm, Emil and Schultis, Carltheo.
ISOMERIE OF THIO-ALDEHYDE. [1963] 16p. (formulae omitted) 9 refs.
Order from SLA $1.60 63-14217

Trans. of [Chemische] Berichte (Germany) 1923, v. 56, p. 937-947.

DESCRIPTORS: *Thio radicals, *Aldehydes, Molecular isomerism, *Iodine compounds, *Formaldehyde, Iodic acid, *Sulfoxides, Oxidation, *Benzaldehydes, Sulfones, Phenyl radicals, Methyl radicals.

Hein.
FORMATION OF ORGANIC CHROMIUM COMPOUNDS FROM COMPLEX SALTS OF CHROMIUM. 7 May 61, 9p. 17 refs.
Order from SLA $1.10 63-14036

Trans. of Journal für Praktische Chemie (Germany) 1939, v. 153, p. 160-168.

DESCRIPTORS: *Metalorganic compounds, *Chromium compounds, Synthesis (Chemistry), *Complex compounds, Potassium compounds, Ammonium compounds, Nitrates, Hydrates, Acetates, Quinones, Chlorides.

Herzig, J.
CONTRIBUTION TO KNOWLEDGE OF TRIGENIC ACID. 24 Dec 60, 10p. 6 refs.
Order from SLA $1.10 63-14029

Trans. of Monatshefte für Chemie (Austria) 1881, v. 2, p. 398-409,

DESCRIPTORS: *Urea derivatives, Chemical properties, Oxidation, Distillation

Holleman, W.
DI- AND TRI-CHLOR XYLENE, III. [1963] 3p.
Order from SLA $1.10 63-14206

Trans. of [Justus Liebigs Annalen der Chemie] (Germany) 1867, v. 144, p. 268-271.

DESCRIPTORS: *Xylenes, Chlorides, Toluenes, Acids, Synthesis (Chemistry), Chemical properties.

Kirpal, A. and Kunze, H.
CHLORIDES OF TETRACHLORO-PHTHALIC ACID. [1963] 3p.
Order from SLA $1.10 63-14218

Partial trans. (p. 2104-2105) of [Chemische] Berichte (Germany) 1929, v. 62, p. 2102-[2106].

DESCRIPTORS: *Phthalic acids, Chlorides, Benzoyl radicals, Methyl radicals, Esters, Synthesis (Chemistry).

Kobayashi, Masaru.
METHOD OF MANUFACTURING DIBASIC FATTY ACID. July 63, 5p. 2 refs.
Order from SA $16.00 SA Code-P-109

Trans. of [published] Japanese patent 12659/1962, cl. 16-B-62 (13-F-1) (16-B-011) filed 16 July 58, appl. 20044/1958, pub. 1 Sep 62, by Osaka City.

DESCRIPTORS: *Dibasic acids, *Fatty acids, Manufacturing methods, *Succinic acids, *Glutaric acids, *Adipic acid, Oxidizers, Nitric acid, Nitrogen compounds, Dioxides.

Komatsu, S. and Kawamoto, T.
CATALYTIC CHLORINATION. III. ACTION OF CHLORINE ON CYCLOHEXANE IN THE PRESENCE OF REDUCED COPPER. [1963] 14p. 13 refs.
Order from SLA $1.60 63-14836

Trans. of [Nihon Kagaku Zasshi] (Japan) 1931, v. 52, p. 685-690.

DESCRIPTORS: *Cyclohexanes, *Chlorination, Chlorine, *Catalysis, *Copper catalysts, Chlorides, Synthesis (Chemistry), Molecular structure, Molecular isomerism.

Ladenburg, A.
ON RACEMIZATION. [1963] 23p. 34 refs.
Order from SLA $2.60 63-14578

Trans. of mono. Sammlung Chem[ischer] und Chem[isch]-Techn[ologischer] Vorträge, pub. by Verlag F. Enka, 1903, p. 454-465.

DESCRIPTORS: *Stereochemistry, Optical phenomena, *Racemization, Theory, Dilatometers, Tensiometers, Electrolytic cells, Solubility, Temperature.

Leone, P.
THE ACTION OF ACID CHLORIDES AND KETONES ON ORGANO ALUMINUM COMPOUNDS. [1963] 5p. 3 refs.
Order from SLA $1.10 63-14844

Trans. of Gazz[etta] Chim[ica] Ital[iana] 1925, v. 55, p. 301-306.

DESCRIPTORS: *Metalorganic compounds, *Aluminum compounds, Ethyl radicals, Pentyl radicals, Iodides, Ketones, *Acetones, *Acetophenones, Organic acids, *Benzoyl radicals, Chlorides

Leone, P.
THE ACTION OF AMMONIA AND AMINES ON ORGANOALUMINUM COMPOUNDS. [1963] 4p. 1 ref.
Order from SLA $1.10 63-14843

Trans. of Gazz[etta] Chim[ica] Ital[iana] 1925, v. 55, p. 306-310.

DESCRIPTORS: *Metalorganic compounds, *Aluminum compounds, Ethyl radicals, Propyl radicals, Iodides, *Ammonia, *Amines, Methyl radicals, *Anilines

Leone, P.
THE FRIEDEL-CRAFTS REACTION AND THE ORGANOMETALLIC COMP[OUNDS] OF Al. [1963] 8p. 25 refs.
Order from SLA $1.10 63-14842

Trans. of mono. Congresso Nazionale di Chimica Pina ed Application [National Congress of Pure and Applied Chemistry] (no. 2) 1926. Atti, p. 1332-1337.

DESCRIPTORS: *Fridel-Crafts reactions, *Metal-organic compounds, *Aluminum compounds, Phenyl radicals, *Iodides, Methyl radicals, Ethyl radicals, Propyl radicals, Pentyl radicals, Benzyl radicals, Chlorides, Chloroform.

The following reactions are considered. Phenyl aluminum iodide and methyl iodide; phenyl aluminum iodide and ethyl iodide; phenyl aluminum iodide and propyl iodide; phenyl aluminum iodide and isoamyl iodide; and phenyl aluminum iodide and benzyl chloride and chloroform.

Leone, P.
ORGANOMETALLIC COMPOUNDS OF ALUMINUM. [1963] 8p. 7 refs.
Order from SLA $1.10 63-14845

Trans. of Gazz[etta] Chim[ica] Ital[iana] 1925, v. 55, p. 294-300.

DESCRIPTORS: *Metalorganic compounds, *Aluminum compounds, Ethyl radicals, Propyl radicals, Pentyl radicals, Octanes, Phenyl radicals, Iodides, Bromides, Synthesis (Chemistry).

Lesbre, Michel.
ON SEVERAL ORGANIC HALOGEN DERIVATIVES OF LEAD. [1963] 3p. 8 refs.
Order from SLA $1.10 63-14841

Trans. of [Academie des Sciences, Paris]. Comp[tes] Rend[us] (France) 1937, v. 204, p. 1822-[1823] (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Metalorganic compounds, *Lead compounds, Alkyl radicals, Halides, *Iodides, Synthesis (Chemistry).

Liefschitz, I. and Schouteden, F. L. M.
METAL COMPLEXES OF OPTICALLY ACTIVE AMINO ACIDS. [1963] 15p. 14 refs.
Order from SLA $1.60 63-14643

Trans. of Rec[ueil des] Trav[aux] Chim[iques des Pays-Bas] (Netherlands) 1939, v. 58, p. 411-422.

DESCRIPTORS: *Metalorganic compounds, *Complex compounds, *Amino acids, Glutamic acid, Salts, Aspartic acid, Crystals, *Polarographic analysis, *Molecular spectroscopy, Absorption spectrum.

A series of glutamates and aspartates of bivalent metals (Cu, Ni, Co, Cd, Zn, Mn) were prepared and investigated polarimetrically as well as photochemically.

The remarkable solubility properties of these salts depends on hydration-dehydration reactions. No cis-trans isomerisms are demonstrable. The assumption of a total (double) activity, of the salts of divalent heavy metals with optically active amino acids, was not proven. (Author)

Linden, T. van der.
BENZENEHEXACHLORIDE AND ITS DECOMPOSITION IN TRICHLOROBENZENE. [1963] 15p. [fig. omitted] 19 refs.
Order from SLA $1.60 63-14388

Trans. of [Chemische] Berichte (Germany) 1912, v. 45, p. 231-247.

DESCRIPTORS: *Insecticides, *Benzenes, *Chlorides, *Cyclohexanes, Decomposition, Chemical analysis.

Matsuura, Ryo and Suzuki, Yoshiaki.
A METHOD FOR THE OXIDATION OF CYCLO-ALKANES. 6 July 63, 7p.
Order from SA $16.00 SA Code-P99

Trans. of published Japanese patent 11,12[illegible]/1962, cl. 16-C-841 (16-C-85) (16-D-41) appl. no. 32,643/1959, 17 Oct 59, pub. 15 Aug 62, by Mitsubishi Kasei Kogyo Co.

DESCRIPTORS: Monocyclic compounds, *Cyclohexanes, Methyl radicals, *Naphthalenes, Oxidation, Catalysts, *Boric acids, Alcohols, Ketones, *Cyclohexanols, *Cyclohexanones, Production.

Niwa, Akashi, Kikuchi, Yoshiaki and others.
A PROCESS OF PREPARATION OF OXO-COMPOUNDS. 6 July 63, 6p.
Order from SA $16.00 SA Code-P101

Trans. of published Japanese patent 12,253/1962, cl. 16-B-51 (16-B-013) appl. no. 32,893/1958, 18 Nov 58, pub. 28 Aug 62, by Mitsubishi Kasei Kogyo Co., Ltd.

DESCRIPTORS: *Aldehydes, Production, *Ethylenes, *Oxo process, Carbon compounds, Monoxides, Hydrogen, Catalysts, Metalorganic compounds, *Cobalt compounds, Laurates, Carbonyl radicals, Carboxylic acids.

Niwa, Tan, Kikuchi, Yoshiaki and others.
A PROCESS FOR THE MANUFACTURE OF BUTYR-ALDEHYDE. 5 July 63, 5p.
Order from SA $16.00 SA Code-P88

Trans. of published Japanese patent 12,256/1962, cl. 16-B-511.4 (16-B-013) appl. no. 23,069/1958, 15 Aug 58, pub. 28 Aug 62, by Mitsubishi Kasei Kogyo Co.

DESCRIPTORS: Butyl radicals, *Aldehydes, Manufacturing methods, *Oxo process, *Propenes, Hydrogen, Carbon compounds, Monoxides, Cobalt catalysts.

Ogawa, T. and Aoki, R.
SEPARATION OF GLUTAMIC ACID. [1963] 4p.
Order from OTS or SLA $1.10 63-14633

Trans. of Japanese patent specification 30-3810, filed 9 Aug 52, pub. 6 June 55, by Ajinomoto Ltd.

DESCRIPTORS: Separation, *Glutamic acid, Solutions, Pyrrolidinone, Carboxylic acids, Solvents, Alcohols, Chemical precipitation.

A process for separation of glutamic acid, characterized in that a solution containing pyrrolidone carboxylic acid (s) is treated and liquid-liquid extracted with a polar solvent having a cyclic radical, in particular with a cyclic alcohol, and in that this step is followed by the step of redissolving the extract in water and heating in the presence of acid or alkali to convert to and precipitate as glutamic acid. (Author)

Ohashi, K. and Suzuki, S.
PRODUCTION OF CULINARY SODIUM GLUTAMATE. [1963] 3p.
Order from OTS or SLA $1.10 63-14622

Trans. of claims of [Japanese patent published application] 29-7018, appl. filed 13 Aug 52, appl. pub. 27 Oct 54, by Toa Synthetic Chemical Co., Ltd.

DESCRIPTORS: Production, *Sodium compounds, *Glutamic acid, Hydrogen compounds, Carbon compounds, Monoxides, Esters, Succinic acids, Aldehydes, Ammonia, Cyanides, Nitriles, Amines, Hydrolysis.

A method of producing culinary sodium glutamate is described. Hydrogen and carbon monoxide (one volume H for one to three volumes CO) are reacted under pressure with an acrylic ester to form succinic semialdehyde, and this treated with ammonia and hydrogen cyanide or salts thereof to form an aminonitrile. The aminonitrile is hydrolyzed to glutamic acid, and this step is followed by known steps to produce sodium glutamate. (Author)

Ohta, M.
SALT OF dl-GLUTAMIC ACID. [1963] 3p.
Order from OTS or SLA $1.10 63-14624

Trans. of Jap[anese] patent [published] appl[ication 30-968] appl. filed 9 Mar 52, appl. pub. 17 Feb 55, by Mitsubishi Chemical Co., Ltd.

DESCRIPTORS: Salts, *Glutamic acid, Heat, Fused materials, *Amines, *Butyl radicals, *Lactones, *Alkali metal compounds, *Cyanides, Hydrolysis, Inorganic acids, Crystallization.

A method of making a salt of dl-glutamic acid comprising the heating and fusing of an alpha-acylamino-gamma-butyrolactone with an alkali metal cyanide and hydrolyzing of the resulting product with an inorganic acid is described. (Author)

Oiwa, Saichi, Kashima, Kan and others.
A METHOD TO LIQUEFY LIGNIN. 6 July 63, 6p.
Order from SA $16.00 SA Code-P92

Trans. of published Japanese patent 7920/1959, cl. 16-C-1 (13-F-12) (16-B-411) (16-B-541.1) (16-C-411) appl. no. 43/1956, 1 Jan 56, pub. 8 Sep 59, by The Noguchi Foundation Research Laboratory.

DESCRIPTORS: *Lignin, Liquids, Production, Calcium compounds, Sulfonates, Deoxidation, Catalysts, *Iron compounds, Oxides, Hydroxides, Solvents, Naphthalenes Phenols, Tar, Petroleum.

Omae, Chikara and Yamamoto, Hiroshi.
A METHOD FOR THE SEPARATION AND PURIFICATION OF 2-METHYL-5-VINYLPYRIDINE FROM THE MIXTURE OF 2-METHYL-5-VINYLPYRIDINE AND 2-METHYL-5-ETHYLPYRIDINE. July 63, 6p.
Order from SA $16.00 SA Code-P-104

Trans. of [published] Japanese patent 11141/1962, cl. 16-E-431, appl. no. 27913/1959, 2 Sep 59, pub. 15 Aug 62, by Nihon-Goseikagaku-Kogyo Co., Ltd.

DESCRIPTORS: *Phridines, Methyl radicals, *Vinyl radicals, Ethyl radicals, Separation, Crystallization, Hydrochloric acid.

Oshima, Mikiyoshi, Oiwa, Saichi, Kashima, Kan.
A METHOD TO LIQUEFY LIGNIN. 5 July 63, 7p.
Order from SA $16.00 SA Code-P91

Trans. of published Japanese patent 7058/1960, cl. 16-C-1 (16-C-41) (16-B-411) (16-B-541.1) appl. no. 8025/1956, 29 Mar 56, pub. 14 June 60, by The Noguchi Foundation Research Laboratory.

DESCRIPTORS: *Lignin, Liquids, Production, Calcium compounds, Sulfonates, Xylose, Exchange reactions, Natural gas, Deoxidation, Catalysts, *Iron compounds, Oxides, Hydroxides, Solvents, Naphthalenes, Phenols, Tar, Petroleum.

Palfray, Léon and Anglaret, Paul.
ORGANIC CHEMISTRY: NEW TECHNIQUES OF THE BOUVEAULT-BLANC REACTION. [1963] 4p. 1 ref.
Order from SLA $1.10 63-14139

Trans. of Academie des Sciences [Paris]. Comptes Rendus (France) 1947, v. 224, p. 404-406. (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Organic compounds, *Chemistry, *Alcohols, *Sodium, Chemical reactions, Esters, Butanols, Fatty acid esters, Reduction (Chemistry).

(See also 63-14138)

Palfray, Léon and Anglaret, Paul.
ORGANIC CHEMISTRY: ON CERTAIN NEW ASPECTS OF THE BOUVEAULT-BLANC REACTION. [1963] 5p. 6 refs.
Order from SLA $1.10 63-14138

Trans. of Academie des Sciences [Paris]. Comptes Rendus (France) 1946, v. 223, p. 860-862 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Organic compounds, *Chemistry, *Alcohols, *Sodium, Esters, Chemical reactions, Reduction (Chemistry), Acids.

(See also 63-14137)

Rostagni, Antonio.
IONIZATION BY ATOMIC COLLISIONS, II. [9 Feb 62] 3p. 3 refs.
Order from SLA $1.10 63-10114

Trans. of [la] Ricerca Sci[entifica] (Italy) 1934, v. 2 [no. 3/4] p. 87-88.

DESCRIPTORS: Ionization, *Argon, *Gas ionization, Atoms, Helium.

Sabatier, P. and Mailhe, C. R.
CHLORINATION OF CYCLOHEXANE. [1963] 1p. 1 ref.
Order from SLA $1.10 63-14837

Abstract trans. of Acad[emie des] Sci[ences] Paris. [Comptes Rendus] (France) 1903, v. 137, p. 240 (pub. by Gauthier-Villars et Cie., Paris) and Ann[ales de] Chim[ie] (France) 1907, v. 10, no. 8, p. 527.

DESCRIPTORS: *Cyclohexanes, *Chlorination, Chlorides, Synthesis (Chemistry).

Schiff, Hugo.
STUDIES OF BIURET COMPOUNDS. I. BENZAL BIURET AND RELATED COMPOUNDS. [1963] 9p. 13 refs.
Order from SLA $1.10 63-14207

Trans. of [Justus Liebigs Annalen der Chemie] (Germany) 1896, v. 291, p. 367-377.

DESCRIPTORS: *Urea derivatives, Benzyl radicals, Carbamyl radicals, Amines, Synthesis (Chemistry), Methyl radicals, Ethyl radicals, *Cyanuric acid, Urea, Carbonic acids, Ethers, Carbamyl radicals, Chlorides.

Schmidt, Erich and Rutz, Gustav.
METHOD FOR THE PREPARATION OF NITRO- AND CHLOR-NITRO OLEFINS, I. [1963] 6p. 22 refs.
Order from SLA $1.10 63-14216

Trans. of [Chemische] Berichte (Germany) 1928, v. 16, p. 2142-2148.

DESCRIPTORS: *Propenes, *Butenes, *Pentenes, *Octenes, *Nitro radicals, Chlorides, Synthesis (Chemistry), Acetyl radicals, Alcohols, Potassium compounds, Bicarbonates.

Semerano, Giovanni and Riccoboni, Luigi.
SILVER-ALKYLS AND THEIR USE AS A SOURCE OF FREE ALKYL RADICALS AT LOW TEMPERATURES. [1963] 2p.
Order from SLA $1.10 63-14834

Trans. of la Ricerca Scientifica (Italy) 1940, v. 11, p. 269-270.

DESCRIPTORS: *Metalorganic compounds, *Silver compounds, Alkyl radicals, Methyl radicals, Ethyl radicals, *Free radicals, Production, Low temperatur research.

Simonsen, Einar.
ALCOHOL FROM CELLULOSE AND WOOD. [1963] 44p. 21 refs.
Order from SLA $4.60 63-14133

Trans. of [Angewandte Chemie] (Germany) 1898, no. 9, p. 195ff.

DESCRIPTORS: *Alcohols, *Cellulose, *Wood, Dusts, Potatoes, Lignin, *Carbohydrates, Glucose, Chemical reactions, Pressure, Acids, Time, Water, Hydrogen ion concentration, Glucose, Statistical data.

Ullmann, Fritz and Korselt, Johannes.
DICHLORO-DIPHENYL SULFONS. 18 Sep 59, 3p. 6 refs.
Order from SLA $1.10 63-14380

Condensed trans. (p. 641-643) of [Chemische] Berichte (Germany) 1907, v. 40, p. 641-[648].

DESCRIPTORS: *Sulfones, Chlorides, Phenyl radicals, Nitro radicals, Anilines, Synthesis (Chemistry).

Waua, Akimitsu.
A PRODUCTION METHOD OF POLY-AMINO-ACID BY USE OF BASIC DYES. [1962] 5p.
Order from OTS or SLA $1.10 63-10877

Trans. of Japan patent [publication] 1962-15049, official rept. 25 Sep 62, appl. 29 Dec 60 (appl. 1960-51152, by Ajinomoto Corp.).

DESCRIPTORS: *Amino acids, *Dyes, Carboxyl radicals, Anhydrides, *Polymerization, Manufacturing methods.

The patent claims the method of the production of poly amino acid from N-Carboxy amino acid anhydride, which is characterized by use of basic dyes as catalyst for polymerization reaction.

Winnacker and Osswald.
SODIUM PHENYL. 20 Sep 48, 3p. 3 refs.
Order from OTS or SLA $1.10 63-14297

Trans. from mono. (report) of I. G. Farbenindustrie A.G., Frankfurt a.M. (PB-70357).

DESCRIPTORS: *Metalorganic compounds, *Sodium compounds, *Phenyl radicals, *Benzoic acids Synthesis (Chemistry), Benzenes, Chlorides

Yamada, I. and Ogura, Y.
SYNTHESIS OF dl-GLUTAMIC ACID FROM FURFURAL. [1963] 7p.
Order from OTS or SLA $1.10 63-14631

Trans. of Japanese patent specification 30-3218, filed 15 May 53, pub. 14 May 55, by Noguchi Research Foundation.

DESCRIPTORS: Synthesis (Chemistry), *Glutamic acid, *Furaldehydes, *Chlorophylls, Organic pigments, *Catalysts, Oxidation, Alcohols, Aldehydes, Esters, Crystals, Reduction (Chemistry).

Yamashita, Motoharu and Kabachi, Tetsuo.
METHOD OF MANUFACTURING ACETOGUANAMINE. July 63, 5p. 3 refs.
Order from SA $16.00 SA Code-P-111

Trans. of [published] Japanese patent 6846/1962, cl. 16-E-47, filed 4 Mar 59, appl. 7006/1959, pub. 2 July 62, by Nippon Carbide Industry Co.

DESCRIPTORS: *Triazines, Amines, Methyl radicals, Manufacturing methods, *Acetonitriles, *Guanidines, Cyano radicals, Catalysts, Potassium compounds, Hydroxides, Solvents, Methanols, Ethanols.

Zuman, Petr.
ALDIMINES, KETIMINES SCHIFF'S BASES. [1963] 35p. (tables refs. omitted).
Order from SLA $3.60 63-14507

[Partial] trans. (p. 688-698) of Chemicke Listy (Czechoslovakia) 1952, v. 46 [no. 11] p. 688-[708]. Another trans. is available from SLA mi$3.60, ph$9.30 as 60-18539 [1960] 51p.

DESCRIPTORS: *Imines, *Aldehydes, *Ketones, Synthesis (Chemistry), *Amines, Chemical reactions, Chemical analysis, Spectroscopy, Dipole moments, Polarographic analysis, Physical properties, Molecular isomerism, Chemical equilibrium, Reaction kinetics, Hydrogenation, Ammonia.

For abstract see Technical Translations 4: 660, 1960.

Physical Chemistry

RESEARCH ON VIBRATIONS AND HEAD LOSSES INSIDE TUBE BUNDLES. Quarterly rept. 5 Oct-Dec 61, on Contract 025-60-10 RDF. [1962] 12p.
Order from OTS or SLA $1.60 EURAEC-223

Trans. of a rept. from Société Grenobloise d'Étude et d'Applications Hydrauliques (France) Jan 62.

DESCRIPTORS: *Hydraulic models, Cylindrical bodies, Vibration, *Hydraulic research, Tests, Fluid flow.

Tests were carried out on a hydraulic mock-up. Under flow at right angle: on a cylindrical brass rod (0.6 cm diameter-29.5 cm length), fixed at one end and free at the other. The vibrations of this rod were monitored with reference to the rate of flow which varied from 40 to 150 cm per sec. The main vibration takes place in a plane at right angle to the flow. Its frequency and amplitude varies with the velocity. The amplitude reaches a maximum value for a velocity of 112 cm per sec. and subsequently drops rapidly. At the highest velocity (150 cm per sec.) the vibration is most irregular, the amplitude falling to nearly zero at times. Under parallel flow: on a stainless steel tube (diameters 1.2 and 0.9 cm-115 cm length) fixed at both ends and located within the flow center line. The rate of flow varies from 200 cm per sec. to 600 cm per sec. The vibration amplitude rises with the velocity. The frequency is independent of the velocity: it is equal to the self-frequency in water. The element vibrates in accordance with the base modulus and in accordance with the higher moduli (2 and 3). (Author)
(See also EURAEC-177)

Alentsev, M. N.
CALORIMETRIC MEASUREMENT OF FLUORESCENCE YIELD [Kalorimetricheskoe Izmerenie Vykhoda Fluorestsentsii]. Feb 63 [14]p. 5 refs.
ABL Trans. no. 725; JPRS: R-2990-D; AD-400 973.
Order from OTS or SLA $1.60 63-19232

Trans. of Zhurnal Eksperimental'noi i Teoreticheskoi Fiziki (USSR) 1951, v. 21, no. 2, p. 133-141.
Another trans. is available from NRCC as TT. 433.

DESCRIPTORS: *Calorimetry, Solutions, *Dyes, *Fluorescence, Absorption, Heat, Energy.

A method for measuring fluorescence yield of solutions is described, through which the heating resulting from absorbed light in fluorescing and nonfluorescing solutions is compared. Determination of the yield is based on the fact that for the same absorption in a nonfluorescing solution all the absorbed light energy is converted into heat, and the heating of the fluorescing solution takes place by means of that portion of the energy of the absorbed light which is not emitted in the form of fluorescence. Results of fluorescence yield measurements are presented for several solutions of dyes. The precision of measurements for substances with yields close to unity is of the order of 5 percent. (Author)

Bagadasaryan, Kh. S., Izrailevich, N. S., and Krongauz, V. A.
INTRAMOLECULAR MIGRATION OF ENERGY DURING THE RADIOLYSIS OF ALKYL-BENZENES (Vnutrimolekul'arnaya Migratsiya Energii pri Radiolize Alkilbenzolov) tr. by Marcel I. Weinreich. 11 July 62, 7p. 4 refs.
Order from OTS or SLA $1.10 SCL-T-429

Trans. of Akademiya Nauk SSSR. Doklady, 1961, v. 141, no. 4, p. 887-890.

DESCRIPTORS: *Radiation chemistry, *Alkyl radicals, *Benzenes, *Toulenes, Ethyl radicals, *Cumenes, *Octanes, *Hexanes, *Radiolysis, Free radicals, Energy, Distribution.

The radical yield was investigated during a gamma radiolysis of toluene, ethyl benzene, cumene, n-butyl benzene, and n-octyl benzene; as well as in an equimolecular mixture of benzene with n-octane. For the purpose of comparison, the radical yields were also determined for benzene, n-hexane, and n-octane. Iodine was used as an acceptor of the radicals.

Brodskii, A. I., Aleksankin, M. M., and Grazerov, I. P.
A STUDY OF THE OXIDATION MECHANISM OF PYRUVIC ACID WITH HYDROGEN PEROXIDE (Izuchenie Mekhanizma Okislieniya Pirovinogradnoi Kisloty Perekis'yu Vodoroda). [1962] 12p. (foreign text included) 11 refs.
Order from OTS or SLA $1.60 63-10749

Trans. of #Zhur[nal] Obshchei Khim[ii] (USSR) 1962, v. 32 [no. 3] p. 829-833.

DESCRIPTORS: *Pyruvic acid, *Hydrogen peroxide, *Oxidation, Carboxyl radicals, Carbonyl radicals, Chemical reactions.

The distribution of heavy oxygen in the oxidation reaction of pyruvic acid with hydrogen peroxide after the introduction of markings into the carbonyl, water or peroxide was studied. In this reaction the corbonyl group oxidizes; it is preserved in the acetic acid formed but the carboxyl group is completely converted into the carbon dioxide forming. The reaction goes through the stage of a regrouping with the formation of a mixed anhydride of acetic and carbonic acids, which then hydrolyzes with carboxyl oxygen bond breakage. A rapid exchange of oxygen between the pyruvic acid carbonyl and water was found. The exchange proceeds significantly slower in the carboxyl of this acid but more rapidly than in acetic acid. (Author)

Chepelevetskii, M. and Bol'ts, Ts.
SOLUBILITY OF Na_2SiF_6 IN PHOSPHORIC ACID SOLUTIONS AND THE SALTING-OUT EFFECT OF NaCl. [1963] 17p. (2 figs. omitted) 6 refs.
Order from OTS or SLA $1.60 63-14619

Partial trans. of [Zhurnal Prikladnoi Khimii] (USSR) 1937, v. 10, p. 1183-1193.

DESCRIPTORS: *Sodium compounds, *Silicon compounds, *Fluorides, Solubility, *Phosphoric acids, Water, Fluorine, Apatite, Phosphorites, Salts, Tests, Chemical analysis, Experimental data.

Cremer, Erika and Baldt, Rudolf.
MORE RECENT MEASUREMENTS OF THE CATALYTIC CLEAVAGE OF ETHYL CHLORIDE FOR TESTING THE RELATIONSHIP BETWEEN HEAT OF ACTIVATION AND ACTIVITY. [1963] 12p. (figs. omitted) 8 refs.
Order from SLA $1.60 63-14816

Trans. of Zeitschrift für Naturforschung (West Germany) 1949, v. 4a, p. 337-341.

DESCRIPTORS: *Ethyl radicals, *Chlorides, *Catalysis, *Lead catalysts, *Cobalt catalysts, *Nickel catalysts, *Barium compounds, *Calcium compounds, *Cadmium compounds, Catalysts, Heat of activation, Reaction kinetics, Sedimentation

More recent measurements are given for the catalytic cleavage of ethyl chloride on the catalysts $PbCl_2$, $BaCl_2$, $CoCl_2$, $NiCl_2$, $CaCl_2$ and $CdCl_2$. The catalysts were pretreated at different temperatures between 600°K and 900°K, whereupon a linear rise of the heat of activation with this pretreatment temperature was often shown. The dependence of the reaction rate on the pressure of the ethyl chloride was tested on $CaCl_2$, $PbCl_2$, $BaCl_2$, and $CdCl_2$, and for the initial transformation (<50%) a reaction on the first order was found. Some measurements on the rate of sedimentation of the $BaCl_2$ and $NiCl_2$ catalysts which were used are also given. The heats of activation which were found fluctuate between 12 and 42 kcal/mole. The regularity previously exhibited between the heat of activation and the activity holds true in the entire interval. (Author)

Debierne, André.
A NEW METHOD OF TRANSFORMATION. 24 Mar 61, 3p. 1 ref.
Order from SLA $1.10 63-10355

Trans. of [Academie des Sciences, Paris]. Comptes Rendus (France) 1937, v. 205, p. 141-143 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: Thermochemistry, Low temperature research, *Transformations, Adsorption, Helium, Hydrogen, Carbon, Cryogenics, Nuclear reactions

Dervichian, D. S.
FOAMS AND FOAM DESTRUCTION. Lecture at Discussion Convention of the DEG, Ludwigshafen a/Rhein, 29 Oct 54. [1963] 15p. 17 refs.
Order from SLA $1.60 63-14872

Trans. of Z[eitschrift für] Elektrochem[ie] (West Germany) 1955, v. 59, no. 4, p. 290-296.

DESCRIPTORS: *Foams, *Foaming inhibitors, Bubbles, Colloids, Adsorption, Stability, Surface tension, Surface properties.

Duntze, Richard.
SCIENTIFIC BASES AND TECHNICAL PROGRESS IN THE USE OF SILICA GEL. [1963] 15p. 16 refs.
Order from SLA $1.60 63-14557

Trans. of Chem[iker] Z[eitung] (Germany) 1942, v. 66, no. 19/20, p. 196-199.

DESCRIPTORS: *Gels, *Silicon compounds, *Dioxides, Absorption (Physical), *Surface-active substances, Desiccants, Driers (Apparatus), Gases, Liquids, *Hydroxides.

Epple, G. V., Odintsova, V. P., and Entelis, S. G.
MEASUREMENT OF THE DENO (C_0) SECONDARY ACIDITY FUNCTION OF THE HCl-H_2O SYSTEM. [1962] 5p. 5 refs.
Order from OTS or SLA $1.10 62-20448

Trans. of Akad[emiya] Nauk SSSR. [Otdelenie Khimicheskikh Nauk]. Izvest[iya] 1962, no. 8, p. 1365-1367.

DESCRIPTORS: *Hydrogen ion concentration, *Hydrochloric acid, *Water, Spectrophotometers, Ionization, Thermodynamics, Entropy, Carbinols, Chemical indicators

The $C_0(H_R)$ acidity function was measured for the HCl-H_2O system over a concentration range of 2%-22% of HCl at 20°. The constants of ionization for di-p-tolylphenylcarbinol and di-p-anisylphenylcarbinol were determined in H_2SO_4-H_2O over a temperature range of 18° to 80°, and the heat and entropy of ionization were determined.

Foraboschi, Franco P.
CONVERSION IN A CONTINUOUS PHOTOCHEMICAL REACTOR: DIMENSIONAL CONSIDERATIONS. [1963] 14p. (fig. formulae omitted) 10 refs.
Order from SLA $1.60 63-14191

Trans. of la Chimica e l'Industria (Italy) 1959, v. 41, no. 8, p. 731-737.

DESCRIPTORS: *Photochemistry, Laboratory equipment, Cylindrical bodies, Tanks (Containers), Monochromatic light, Fluid flow, Oxalic acids, Equations, Reaction kinetics.

The dimensioning of a continuous photochemical reactor, cylindrical with circular section, lighted uniformly with monochromatic light, when the motion of the fluid is laminar, is studied. Some simplified hypotheses are made and a system of equations arrived at which connects the composition of fluid and light intensity at one point of the reactor to the parameters which characterize the fluid, the reactor and the kinetics of reaction. It is shown that the conversion is a dimensionally homogeneous function of such parameters and by the formal procedures of dimension analysis, a group of non-dimensional variables may be determined of which conversion may be considered a function. The number of these variables is less than four in relation to the original parameters, since the fundamental units of measurement of these are four. (Author)

Frumkin, A. N.
ON THE SIGNIFICANCE OF ELECTROCHEMICAL METHODS FOR THE INVESTIGATION OF PROPERTIES OF SURFACE COMPOUNDS. [1963] 8p. 3 refs.
Order from OTS or SLA $1.10 63-14436

Trans. of mono. [Poverkhnostnye Khimicheskie Soedineniya i Ikh Rol'v Yavleniyakh Adsorbtsii] (Surface Chemical Compounds and their Role in Adsorption Phenomena) Moscow, 1957 [p. 53-58].
Other translations are available from OTS or SLA as R-3749, 6p.

DESCRIPTORS: Electrochemistry, Surfaces, *Thin films, Oxides, Oxygen, *Chemisorption, Theory, Electrodes.

For abstract see Chemical Abstracts 51: 17328, 1957

Fukushima, Seitaro.
PROCESS FOR PURIFYING ZINC ELECTROLYTE, tr. by K. K. K. 21 Dec 62, 6p. (figs. omitted).
Order from OTS or SLA $1.10 63-13753

Trans. of Japanese pat. appl. pub. 36-8558, cl. 10 M 23, appl. 7 Oct 59, pub. 24 June 61, by Director, Research Institute of Mineral Dressing and Metallurgy.

DESCRIPTORS: *Electrolytes, *Zinc, Purification.

The process concerns properly controlling Mn^{++} and MnO_4 -- quantities in the electrolyte during one phase of the circulation cycle of the zinc electrolyte, to precipitate manganese dioxide by their mutual reaction, to remove lead ions from the electrolyte by co-precipitation, and at the same time to properly control the amount of manganese remaining in the electrolyte. (Author)

Gragerov, I. P. and Turkina, M. Ya.
A STUDY OF THE TRANSFORMATIONS OF PHENYL RADICALS IN SOLUTION BY MEANS OF ISOTOPIC AND MASS-SPECTROMETRIC METHODS (Issledovanie Prevrashchenii Fenil'nykh Radikalov v Rastvore Izotopnym i Mass-Spektrometricheskim Metodom) tr. by Marcel I. Weinreich. 16 July 62, 9p. 13 refs.
Order from OTS or SLA $1.10 SCL-T-431

Trans. of Akademiya Nauk SSSR. Doklady, 1961, v. 140, no. 6, p. 1317-1320.

DESCRIPTORS: *Phenyl radicals, Free radicals, Transformations, Isotopes, Labeled substances, *Deuterated compounds, *Mass spectroscopy, Benzenes, Cyclohexanes, Photolysis.

Homolytic reactions may proceed according to two different mechanisms: either through free radicals or by way of forming a reaction complex, the disintegration of which yields products without the participation of free radicals. The choice to be made between those two mechanisms presents considerable difficulties and required until now many-sided investigations of each separate reaction. A study is made of a variant of the isotopic method in combination with the mass-spectrometric method which facilitates this choice and which permits a solution in a simple way, of the question about the mechanism of homolytic reactions in which there is participation of compounds containing phenyl radical groups. (Author)

Grigorov, O. N. and Prikhid'ko, N. E.
TRANSFERENCE NUMBERS OF CALCIUM IONS THROUGH COLLODION MEMBRANES OF VARIOUS STRUCTURES. [1963] 4p. 6 refs.
Order from OTS or SLA $1.10 63-14569

Trans. of Kolloidnyi Zhurnal (USSR) 1949, v. 11, [no. 3] p. 141-142.

DESCRIPTORS: *Desalination, *Calcium, Potassium, Chlorides, Ions, *Electrodialysis, Plastic films, *Cellulose nitrates, *Membranes, Porosity, Permeability.

It is shown that the change in the transference number of the Ca ion amounts as a maximum to 12% of the value of its transference number in the free solution, whereas for the K ion this change amounts to 42% for the finest-pore membrane, which is found to be connected with the relatively large hydrodynamic radius of the Ca ion and the manifestation of a screening effect for collodion membranes of small pore radius. (Author)

Kafarov, V. V.
ANALYSIS OF MASS TRANSFER PROCESSES BASED ON CONCEPTS OF INTERPHASE TURBULENCE. 16 May 62 [22]p. AID rept. T-63-71.
Order from OTS or SLA $2.60 63-19442

Trans. of paper presented at the Conference on Heat and Mass [Transfer] held in Minsk [5-10 June] 61

DESCRIPTORS: *Turbulence, *Mass transfer, Surface tension, Diffusion, Absorbents, Hydrodynamics, *Fluid mechanics.

Kudintseva, G. A., Tsarev, B. M. and Epel'baum, V. A.
BORIDES OF TRANSITION METALS AND THEIR ELECTRON-EMISSION PROPERTIES. 3 Dec 62 [12]p. 10 refs. FTD-TT-62-1506; AD-294 507.
Order from OTS or SLA $1.60 63-15343

Unedited rough draft trans. of mono. Konferentsii po Khimii Bora i Ego Doedinenii, Moscow, 1958, p. 106-111.

DESCRIPTORS: *Borides, Metals, *Transition elements, Thermochemistry, *Thermionic emission, Reduction (Chemistry).

The developed method of obtaining diborides of titanium, zirconium, vanadium, chromium, manganese and other transition metals upon the combined reduction by carbon of mixtures of oxides of the corresponding metal and boron permits the obtainment of borides in large quantities from abundant raw material. Chromium diboride can be used as material of thermo-cathodes. The diborides can be used as antidynatron coatings.

Lazorenko-Manevich, R. M.
THE REDISTRIBUTION OF POTENTIAL AT THE SEMICONDUCTOR ELECTROLYTE INTERFACE UNDER THE INFLUENCE OF LIGHT. [1963] [11]p. 7 refs.
Order from OTS or SLA $1.60 63-14735

Trans. of #Zhur[nal] Fiz[icheskoi] Khim[ii] (USSR) 1962, v. 36 [no. 9] p. 2066-[2071].

DESCRIPTORS: *Semiconductors, *Electrolytes, *Electrodes, *Light, Distribution, Electric potential, Electric currents, *Electrochemistry, *Photochemistry.

The effect of illumination on the separate components of the overvoltage at the semi-conductor electrode is investigated. If a current flows through the system, the potential shifts which originate during illumination of the electrode in the Helmholtz portion of the double layer ($d\phi_r/d\phi_{O3}$) and in the surface dipole layer ($d\phi_D/d\phi_{O3}$) are always equal to or less than the corresponding changes which occur when the current density is changed. The case of equality is realized practically only in the absence of surface states. In the absence of current, changes in ϕ_D and ϕ_{O3} during illumination may be comparable. (Author)

Markov, V. K. and Nagornaya, N. A.
THE CHANGE IN THE PROPERTIES OF SILICA GELS ON WASHING AS A CONSEQUENCE OF THE CHANGE IN THEIR SUBMICROSCOPIC STRUCTURE. [1963] 15p. 11 refs.
Order from OTS or SLA $1.60 63-14587

Trans. of [Zhurnal Prikladnoi Khimii] (USSR) 1937, v. 10, p. 853-860.

DESCRIPTORS: *Gels, *Silicon compounds, *Dioxides, *Sorption, Impregnation, Structural properties, Porosity, Surface-active substances, Adsorption.

Matajec, R.
PHOTO-CONDUCTIVITY MEASUREMENTS ON OPTICALLY SENSITIZED ZnO: EXPERIMENTS ON THE MECHANISM OF OPTICAL SENSITIZATION (Photoleitungsmessungen an Optisch Sensibilisiertem ZnO: Experimente sum Mechanismus der Optischen Sensibilisierung). [1962] [10]p. (foreign text included) 22 refs.
Order from SLA $1.10 62-20018

Trans. of [Zeitschrift für Elektrochemie] (West Germany) 1961, v. 65, no. 9, p. 783-786.

DESCRIPTORS: *Photoconductivity, *Zinc compounds, *Oxides, Measurements, Photolysis, Pigments, Sensitivity, Illumination, Photographic emulsions, Photosensitivity, Photochemistry.

With the optical sensitization of silver halide emulsions, the pigment molecules return to their initial condition after the sensitization process, and thus the optical sensitization reaction can be carried out several times. This result, which is very important for the mechanism of optical sensitization, is checked in this work by electrical photoconductivity measurements on optically sensitized ZnO. With ZnO, namely (as opposed to silver halides), an irreversible, photochemical change of light absorption (photolysis), which could affect optical sensitization, does not occur. The sensitization mechanism is discussed briefly. (Author)

Nasini, A. C. and Corinaldi, C.
[DETERMINATION OF THE SOLUBILITY OF ARGON, NITROGEN, AND HYDROGEN IN PARAFFIN OIL]. [1962] [2]p.
Order from SLA $1.10 62-20169

Trans. of Società Italiana per il Progresso delle Scienze. Atti [1931] v. 20, no. 2, p. 164-166.

DESCRIPTORS: Solubility, *Argon, *Nitrogen, *Hydrogen, *Synthetic waxes, Oils, *Mineral oils.

Novikov, G. I., Makarenya, A. A. and others.
AN IMPROVED CIRCULATION METHOD FOR DETERMINING DISSOCIATION PRESSURE. [1962] [10]p. 28 refs.
Order from OTS or SLA $1.10 63-13399

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Khimiya i Khimicheskaya Tekhnologiya (USSR) 1960 [v. 3] no. 5, p. 952-958.

DESCRIPTORS: *Gas analysis, Chemical equilibrium, Thermodynamics, Thermal dissociation.

An improved circulation apparatus using semimicrochemical and thermoconductometric methods of gas analysis is described for investigating chemical equilibria and determining the dissociation pressure of binary compounds. Experiments were performed including a study of the system: $FeCl_{2(solid)} + H_2 =$ Fe + 2HCl, to compare the operation of the apparatus using semimicro and macro analysis of the gas phase. (Author)

Popov, M. M. and Tazetdinov, F. P.
THE VAPOUR PRESSURE OF T_2O. [1961] 9p. 11 refs. NP-tr-534.
Order from OTS or SLA $1.10 61-23151

Trans. of #Atomnaya Energiya (USSR) 1960, v. 8, no. 5, p. 420-424.

DESCRIPTORS: *Vapor pressure, *Tritiated compounds, Water.

The present paper describes a method of measuring the vapour pressure of samples of tritiated water containing high percentages of tritium (83.4 and 98.1 mol.% T_2O) in the temperature range from 12 to 95°C. On account of the pressure of gaseous radiolysis products of water the measurements were carried out by a static method for two values of the apparatus volume. It was found that the boiling points of HTO and T_2O are 100.8°C and 101.6°C respectively, the latent heats of evaporation at these temperatures are 9.9 and 10.1 kg cal/mol and the standard entropies 19.3 and 19.0 e.e. respectively. (Author)

Reicher, L. Th.
HEAT OF FORMATION OF NICKEL CARBONYL. [1963] [15]p. 2 refs.
Order from SLA $1.60 63-14833

Trans. of Genootschap ter Bevordering van Natuurgenees- en Heelkunde. Werken (Netherlands) 1896, ser. 2, v. 2, p. 296-335.

DESCRIPTORS: *Nickel compounds, *Carbonyl radicals, *Heat of formation, Oxygen, Combustion.

Reznitskii, L. A., and Khomyakov, K. G.
CALORIMETRIC DETERMINATION OF THE HEAT OF REDUCTION OF FERRITES BY HYDROGEN. III. REDUCTION OF CUPRIC OXIDE AND COPPER FERRITE. [1962] [4]p. 2 refs.
Order from OTS or SLA $1.10 63-13577

Trans. of Mosc[ow] U. Vestn[ik]. Ser[iya] 2: [Khimiya] (USSR) 1960 [v. 15] no. 4, p. 40-42.

DESCRIPTORS: Heat of reaction, *Reduction (Chemistry), Calorimeters, *Copper compounds, Oxides, *Ferrites, Heat of formation, Hydrogen.

The heat of reduction of cupric oxide in the reaction $CuO_{(T)} + H_{2(r)} \longrightarrow Cu_{(T)} + H_2O_{(T)}$ was determined to be $\Delta H_{698^oK} = -21960$ kcal./mole. The heat of formation of copper ferrite from the oxides, $CuO_{(T)} + Fe_2O_{3(T)} \longrightarrow CuFe_{2.}O_{4(T)}$ was calculated to be $\Delta H_{698^oK} = +2600$ kcal./ mole. Copper ferrite is formed from the oxides with the absorption of heat. (Author)

Rostagni, Antonio.
RESEARCH ON POSITIVE AND NEUTRAL RAYS. PT. I. NEUTRALIZATION OF POSITIVE RAYS. [1963] 20p. 9 refs.
Order from SLA $1.60 63-14671

Trans. of Nuovo Cimento (Italy) 1934 [ser. 8] v. 11, p. 34-47.

DESCRIPTORS: *Ion beams, *Neutralization, Ions, Gas ionization, Ionization chambers, Velocity, Gases, Argon, Metals, Surface area, Measurement.

An experimental arrangement for measurements with positive and neutral slow rays is described. The results of measuring the neutralization of ions on metallic surfaces and in gas at different velocities are presented. In "grazing" collisions of argon ions at velocities between 100 and 600 volts with a copper wall, the percentage of neutralized particles is negligible in comparison with that originating in a "space" of a few centimeters of gas at $<10^{-5}$ mm. Hg pressure. The effective cross-section of the gases Ar, Ne, He and H_2 for the neutralization of the respective ions is almost independent of the velocity of these ions between 400 volts and 6 volts. The measurements further indicate that ionization of the gases Ar and Ne by collision of Ar^+ ions occurs at velocities between 50 and 100 volts. (Author)

Samoilovich, V. G. and Filippov, Yu. V.
ELECTROSYNTHESIS OF OZONE. VI. STEADY-STATE CONCENTRATIONS AND THE MECHANISM OF OZONE FORMATION. 15 Jan 63 [13]p. 22 refs. FTD-TT-62-1536; AD-298 235.
Order from OTS or SLA $1.60 63-19259

Unedited rough draft trans. of #Zhurnal Fizicheskoi Khimii (USSR) 1962, v. 36, no. 7, p. 1420-1425.

DESCRIPTORS: *Ozone, Synthesis, *Electrochemistry, Electric discharges, Reaction kinetics, Towers (Chemistry), Pressure.

The steady-state ozone concentration in a circulating system is not a function of the active current in the ozonizer. At high pressures, it is also not a function of pressure. At reduced pressure, there is at first a smooth drop in ozone concentration, and then, at comparatively low pressures, the drop is sharp. A mechanism is proposed for the formation and decomposition of ozone which takes into account both bulk and surface processes. The latter play an especially great role in ozone synthesis at low pressures. (Author)
(See also 63-15554)

Selivanova, N. M., and Pakhorukov, N. I.
ON THE HEATS OF SOLUTION OF SELENIOUS ACID. [1962] [6]p. 8 refs.
Order from OTS or SLA $1.10 63-13422

Trans. of Izv[estiya] Vysshikh Uchebn[ykh] Zavedenii. [Khimiya i Khimicheskaya Tekhnologiya] (USSR) 1961 [v. 4] no. 3, p. 355-358.

DESCRIPTORS: *Heat of solution, Specific heat, *Selenious acid, Selenium compounds, Dioxides, Thermochemistry

The purpose of the investigation was the determination of the integral heats of solution in water of selenious acid in solutions of various concentrations, and verification of the values of the heat of solution in water of selenium dioxide at a dilution of 1:200. (Author)

Shantarovich, P. S. and Shlyapnikova, I. A.
POLYMERIZATION KINETICS OF HYDROCARBONS WITH CONJUGATED BONDS. II. POLYMERIZATION OF PHENYLACETYLENE AND THE PARAMAGNETIC PROPERTIES OF THE POLYMERS (Kinetika Polimerizatsii Uglevodorodov s Sopryazhennoi Svyaz'yu. II. Polimerizatsiya Fenilatsetilena i Paramagnitnie Svoistva Polimerov) tr. by Marcel I. Weinreich. 3 Aug 62, 11p. 5 refs.
Order from OTS or SLA $1.60 SCL-T-435
Trans. of Vysokomolekulyarnye Soedineniya (USSR) 1961, v. 3, no. 10, p. 1495-1499.

DESCRIPTORS: *Acetylenes, *Phenyl radicals, *Polymerization, Reaction kinetics, *Paramagnetic resonance, Molecular structure, Molecular weight, Carbonization.

The products of the thermal polymerization of phenylacetylene were investigated. The polymer has a chain length of 6 to 17 monomer units. All specimens exhibit durable EMR spectra in the form of a narrow lone singlet without hyperfine structure. With elevation of temperature the mean molecular weight of the polymer falls and the EMR signal increases. At temperatures of 400 to 450° carbonization takes place, accompanied by a sharp increase in the EMR signal to 10^{19} to 10^{20} active particles particles per gram. (Author)

Veselovskii, V. I.
SENSITIZATION MECHANISM OF THE PHOTOELECTROCHEMICAL PROCESS AT A ZINC-ZINC OXIDE ELECTRODE (Sensibilizatsionnyi Mekhanizm Fotoelektrokhimicheskogo Protsessa na Zn-ZnO Elektrode). [1962] 29p. 9 refs.
Order from OTS or SLA $2.60 AEC-tr-5230

Trans. of Zhurnal Fizicheskoi Khimii (USSR) 1948, v. 22 [no. 12] p. 1427-1442.
Partial trans. (excerpts) is available from OTS or SLA $2.60 as 62-16109 [1962] [25]p. (foreign text included).

DESCRIPTORS: *Zinc electrodes, *Zinc compounds, *Oxides, Sensitivity, Photochemistry, Electrochemistry.

A very high photogalvanic effect was discovered and investigated on an anodically passivated Zn-electrode. This effect exceeds by an order of magnitude all observed effects of this type and has an absolute quantum yield on the order of one in the region of continuous absorption by ZnO. A sensitization mechanism was established for the photoelectrochemical process. A direct connection was shown between the mechanism of a photogalvanic phenomenon on an electrode and the mechanism of heterogeneous (pigment) sensitization in a solution, because of the same type of photoelectrochemical character of both processes. In the investigation the effectiveness of the photoelectrochemical method was shown in studying anodic processes, especially, in studying the mechanism and nature of the passivation of metals, and also the possibility of applying the photoelectrochemical method to studying processes of heterogeneous sensitization in solutions was demonstrated. (Author)
For abstract of original article see Chem. Abstracts 43: 2858h, 1949)

Vukanovic, Vladimir M. and Milutinovic, Vukica M.
SORPTION OF IODINE VAPORS DURING THE CATHODIC SPUTTERING OF GOLD. 17 July 61, 4p. 10 refs.
Order from SLA $1.10 63-10521

Trans. of Inst[itut za Nuklearne Nauke]. [Bilten] (Yugoslavia) 1954, v. 4, p. 71-73.

DESCRIPTORS: *Sorption, *Iodine, *Vapors, *Cathodes, *Sputtering, *Gold, Physical chemistry.

Investigation was made of how the sorption of iodine vapors depends on the amount of cathodic material projected during cathodic sputtering. A diagram was established for the sorption of iodine on gold, without a discharge. Evidence was offered that in the clean-up effect the sorption of gas or of vapor in the atomic state under the conditions of the discharge tube plays an important role, different from the sorption under normal conditions. (Author)

EARTH SCIENCES

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 212 (EARTH SCIENCES SERIES). 14 June 63 [15]p. JPRS: 19692.
Order from OTS $0.50 63-31043

Consists of abstracts of articles from the scientific and technical journals of Rumania.

DESCRIPTORS: *Abstracts, *Geophysics, Industrial production, Agriculture, Commerce, *Geography, Earthquakes, Atmosphere, Physical fitness, *Geodesics Photogrammetry, Soil mechanics, Mapping, *Geology, *Rumania.

ABSTRACTS PERTAINING TO COMMUNIST CHINA IN SOVIET ABSTRACTS JOURNALS NO. 72 (GEOPHYSICS SERIES). 11 June 63, 44p. JPRS: 19643.
Order from OTS $1.25 63-31027

Trans. of selected abstracts from Referativnyi Zhurnal. Geofizika (USSR) 1962, nos. 1-8, 12; 1963, nos. 1-2.

DESCRIPTORS: *Abstracts, *Geophysics, Climatology, Meteorology, Hydrology, Earthquakes, Geophysical prospecting, Seismographs, Oceanology, Terrestrial magnetism, Upper atmosphere, Gravimeters, Geochemistry, Minerals, *China.

Jen, Mei-o
THE PRESENT SITUATION AND FUTURE PROSPECTS OF KARST RESEARCH. 18 June 63, 15p. 26 refs. JPRS: 19742.
Order from OTS $0.50 63-31074

Trans. of Ti Li (Chinese People's Republic) 1962, no. 5, p. 172-177.

DESCRIPTORS: *Geography, *Geology, Hydrology, Geochemistry, Mining engineering, Petrology.

Highlights of the present situation, the existing problems and the developmental trends of karst geomorphology. Also described are the related problems of speleology and karst hydrogeology and engineering geology.

Machatschki, F.
CRYSTALLOGRAPHY AND CHEMICAL FORMULA OF LANGBANITE, BY H. STRUNZ: COMMENTS. [1963] 4p.
Order from SLA $1.10 63-14585

Trans. of Neues Jahrbuch [für] Mineral[ogie. Monatshefte] (Germany) 1943, p. 46-47 (comment on article from Zentr[alblatt für Mineral[ogie] Geol-[ogie und Paläontologie] (Germany) 1942 [ser.] A, p. 133-136).

DESCRIPTORS: *Magnesium compounds, *Manganese compounds, Iron compounds, *Silicates, *Crystal structure, Chemical properties.

Portnov, I. G.
EXACT SOLUTION OF THE PROBLEM OF FREEZING WITH AN ARBITRARY TEMPERATURE CHANGE ON A STATIONARY BOUNDARY. June 62, 6p. 3 refs.
Order from OTS or SLA $1.10 63-10898

Trans. of Akademiya Nauk SSSR. Doklady, 1962, v. 143, no. 3, p. 559-562.

DESCRIPTORS: *Freezing, *Phase studies, Thermal conductivity, Equations, Integral transforms, Mathematical analysis, Parital differential equations

Rikhter, G. D., ed.
THE FAR EAST: [SELECTED PARTS] tr. by. E. C. B. P. 11 Oct 62, 187p. (figs. omitted). I-1144.
Order from OTS or SLA $13.00 63-13447

Trans. of mono. Dal'nii Vostok, Moscow, 1961, p. 59-92, 118-182, 301-411.

DESCRIPTORS: *Terrain, *Geological survey, *Minerals, *Economic geology, *Paleoecology, *Geography, Geological time, Ice, *Glaciers, *Geogony, *Hydrology, *Rivers, Drainage, Water, Snow, *Oceans, *Soils, *Agriculture, *Mountains, *Forests, Volcanoes, *Animals, Plants (Botany).

The geology, hydrology, relief, climate, vegetation, soils, and the animal life of the Far East of USSR are described in detail.

Saidakovskii, S. Z., Tkachuk, V. G., and Tsvik, S. M.
CONDITIONS CONDUCIVE TO THE FORMING OF SUBTERRANEAN WATER OF THE CHLORIDO-ALKALINO-CALCIUM TYPE (K Voprosu ob Usloviyakh Obrazovaniya Podzemnykh Vod Khloridno-Shchelochno-Kal'tsievogo Tipa) tr. by V. A. Solodukhin. [1963] [5]p. (foreign text included) 5 refs. CSIRO Trans. no. 6083.
Order from OTS or SLA $1.10 63-19145

Trans. of Akademiya Nauk SSSR. Doklady, 1951, v. 80, no. 5, p. 791-792.

DESCRIPTORS: *Geochemistry, *Hydrology, Water, Rock (Geology), Exchange reactions, *Chlorine compounds, *Calcium compounds, *Sodium compounds

Climatology and Meteorology

Block, Walter.
A GRAPHICAL TABLE OF AIR DENSITIES. 29 Mar 46, 2p. 1 ref.
Order from SLA $1.10 63-14827

Trans. of German language article from unidentified source, n.d.

DESCRIPTORS: *Air, *Density, *Equations, Humidity, Temperature, Barometric pressure, Meteorology.

The tables here presented cover the pressure range from 720 to 755 mm. and the temperature range from 15 to 27°, at humidities of 30 to 90%, and is therefore adapted to the usual temperatures in northern Germany. (Author)

Shtein, N. I.
CALCULATION PECULARITIES OF RADIO TRANSMITTERS USED IN CERTAIN METEOROLOGICAL APPARATUS (Osobennosti Rascheta Radioperedatchikov, Ispol'zuemykh v Nekotorykh Meteorologicheskikh Priborakh) tr. by Marcel I. Weinreich. 30 June 59, 11p.
Order from OTS or SLA $1.60 SCL-T-258

Trans. of Nauch[no]-Issled[ovatel'skii] Inst[itut] Gidromet[eorologicheskogo] Priborostroyen[iya]. [Trudy] (USSR) 1957 [no. 4] p. 75-79.

DESCRIPTORS: *Radiosondes, *Radio transmitters, *Meteorological instruments, Radio equipment, Operations.

Geodesy

ARRANGEMENT OF AN ELECTRONIC RANGE FINDER TO MEASURE SMALL DISTANCES. 1 May 63 [7]p. FTD-TT-62-1732.
Order from OTS or SLA $1.10 63-19634

Unedited routh draft trans. of Polish patent 44, 375, cl. 21 a^4, 48/62, 27 Apr 61.

DESCRIPTORS: Ranges (Distance), *Range finding, Electronic equipment, Geodesics.

The object of the invention is an installation which is finding application in geodetic field measurements and allowing to measure directly small distances of up to 3 km with the aid of an electronic method with an accuracy of $10^{-5} \pm 5$ cm. Distance measurement according to the invention is based on measuring phase displacements of an exemplary electromagnetic wave propagating along a measured section. (Author)

HYDROGRAPHIC WORK IN BLACK AND AZOV SEAS [IN] 1898: [EXCERPTS]. [1962] [7]p. ACIC LD-49.
Order from OTS or SLA $1.10 63-13616

Trans. of Glavnoe Gidrograficheskoe Upravlenie. Otchet (USSR) 1898, p. 116-121 (pub. 1899).

DESCRIPTORS: *Hydrographic surveying, Triangulation, Black Sea, Geodesics, Astronomical geodesics.

Yukhin, I. I.
METHOD OF OPTICAL COMPENSATION OF THE LINEAR IMAGE DISTORTION IN VERTICAL-PANORAMIC PHOTOGRAPHING (Metod Opticheskoi Kompensatsii Lineinogo Sdviga Izobrazheniya pri Planovo-Panoramnom Fotografirovanii) tr. by Walter L. Burton. Jan 63 [21]p. 3 refs. ACIC TC-580.
Order from OTS or SLA $2.60 63-15720

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Geodeziya i Aerofotos"emka (USSR) 1961, no. 3, [p. 127-138].
Another trans is available from OTS or SLA $1.60 as 63-13637, JPRS-16853, 27 Dec 62 [17]p.

DESCRIPTORS: *Aerial photography, Photography, Aerial cameras, *Panoramic cameras, *Optical equipment, Mirrors, Rotation, Photographic images, Distortion.
For abstract see Technical Translations 9: 379, 1963

Geology

COLUMBO-TANTALATES FROM FRENCH GUIANA AND THEIR RELATIONS TO INTRUSIVE GRANITES. [1963] [5]p. (figs. omitted) 2 refs.
Order from SLA $1.10 63-16142

Trans. of French language article from unidentified source, n.d.

DESCRIPTORS: *Granites, *Petrology, *French Guiana, Igneous rock, *Economic geology, Geology.

INTERNATIONAL GEOLOGY REVIEW, VOL. 4, NO. 11, P. 1175-1300. Nov 62, lv. 156 refs.
Order from AGI $5.00, $55.00/year

Trans. of Akademiya Nauk SSSR. Geologicheskii Institut. Trudy, 1956, v. 1, pt. 2, p. 5-49; Akademiya Nauk SSSR. Okeanograficheskaya Komissiya. Trudy, 1961, v. 8, p. 125-128; [Chishitsu Chosajo Geppo] (Japan) 1960, v. 11, no. 12, p. 23-25; Sovetskaya Geologiya (USSR) 1961, no. 5, p. 16-38, 59-76, 96-109, 134-138.

DESCRIPTORS: *Geology, Periodicals, Stratigraphy, Models (Simulations), Hydraulic research, Well drilling, Geophysics, Indexes, Iron, Ores, Airborne, Geophysical prospecting, Minerals.

Contents:
General outline of the Ordovician stratigraphy of the Chu-Iliiskie Mountains, by B. M. Keller
Simultaneous modeling of beds and suspended loads, by G. S. Bashkirov
Geophysical loggings at Tazawa Lake District, Akita Prefecture, by Shun-ichi Sano and others
Soviet Geologiya, 1961, no. 5: contents, critique, selected publication, availability of translations
Paleomagnetism, paleoclimates and the problem of extensive horizontal movements of the earth's crust, by P. N. Kropotkin
Structural peculiarities and possible modes of formation of geosynclinal folded structures (based on the Bol'shoi Karatau) by V. V. Bronguleev
Mineralization pattern and origin of the Dashkesan iron ore deposit, by M. A. Mustafabeili and others
Application of aerial magnetic surveys in studies of deep-lying structures in the Siberian platform, by L. V. Bulina
Review section
Reference section.

INTERNATIONAL GEOLOGY REVIEW, VOL. 4, NO. 12, P. 1301-1425. Dec 62, lv. 113 refs.
Order from AGI $5.00, $55.00/year

Trans. of Sovetskaya Geologiya (USSR) 1961, no. 6 p. 3-7, 28-52, 89-117, 130-140, 146; Akademiya Nauk SSSR. Geologicheskii Institut. Trudy, 1956 v. 1, pt. 2, p. 50-102.

DESCRIPTORS: *Geology, Periodicals, Indexes, Geophysical prospecting, Oils, Gases, Theory, Lithosphere, Magnetic fields, Copper, Pyrites, Deposits, Metals, Surveying, Geochemistry, Deuterium, Bitumens, Well drilling, Paleoecology, Conferences.

Contents:
Soviet Geology, 1961, no. 6: contents, critique, selected publication, availability of translations
Direct search for oil and gas, a momentous task for geologic exploration
Hypothesis of differentiation of the earth's crust and some geotectonic generalizations, by E. N. Lustich
Recording transitional processes in inductive resistance measurements in South Ural copper pyrite deposits, by V. F. Kovalenko
Metallometric surveying in Kazakhstan, by V. A. Tsaregradskii
Geochemistry of deuterium in oils and bitumens in the range of crudes, by K. I. Mzhachikh and K. B. Ashirov
Contemplated super-deep drilling in the Soviet Union, by N. I. Khitarov
Interdepartmental Conference on the Quaternary of Central Asia and Kazakhstan [Tashkent, Feb 61]
Super deep test sites, by Yu. M. Sheinmann
Ordovician graptolites of the Chu-Iliiskie Mountains, by B. M. Keller
Reference section
Indexes v. 4.

INTERNATIONAL GEOLOGY REVIEW, VOL. 5, NO. 2, P. 127-252. Feb 63, lv. 89 refs.
Order from AGI $5.00, $55.00/year

Trans. of Zakonomernosti Razmeshcheniya Poleznykh Iskopaemykh (USSR) 1958, v. 1, p. 169-203; Leningrad U. Vestnik (USSR) 1961 [v. 16] no. 18 [Seriya Geologii i Geografii no. 3] p. 42-45; Sovetskaya Geologiya (USSR) 1961, no. 8, p. 31-57, 113-115, 119-122, 127-137, 150-157.

DESCRIPTORS: *Geology, Periodicals, Economic geology, Classification, Metalorganic compounds, Igneous rock, Basalt, Carbonates, Water, Geochemistry, Reviews, Oils, Gases, Bitumens, Minerals, Geophysical prospecting.

Contents:
Fractures, magmatism and mineralization in the northeast of the USSR, pt. 1, by V. T. Matveenko and E. T. Shatalov
An experiment in designing genetic classification of organic minerals, by V. N. Muratov
The Mohorovicic discontinuity, depth of magma origin, and distribution of ultrabasics, by Yu. M. Sheinmann
Tectonic development of the Yarkand sector of the Kun Lun Shan, by V. G. Kaz'min and V. A. Faradzhev
New data on carbonate springs in Zabaikal'e, by V. M. Stepanov
Efficiency of hydrochemical and metallometric methods of prospecting, by R. S. Kononova
Contribution to the mineralogy and geochemistry of lower carboniferous terrigenous section in the southern part of the Kama-Kinel trough, by N. V. Khalatin
Reply to the review "Origin and distribution of oil and gas deposits", by A. L. Kozlov
Reply to G. I. Teodorovich's review of "Oil, gas and solid bitumens in igneous and metamorphic rocks", by N. A. Kudryavtsev
Review section
Reference section.

INTERNATIONAL GEOLOGY REVIEW, VOL. 5, NO. 3, P. 253-378. Mar 63, lv. 125 refs.
Order from AGI $5.00, $55.00/year

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Geologiya i Razvedka (USSR) 1961 [v. 4] no. 10, p. 66-71; Zakonomernosti Razmeshcheniya Poleznykh Iskopaemykh (USSR) 1958, v. 1, p. 203-240; Sovetskaya Geologiya (USSR) 1961, no. 9, p. 8-70, 108-114, 127-135, 148-152.

DESCRIPTORS: *Geology, Periodicals, Radiochemistry, Clay minerals, Terrestrial magnetism, Minerals, Indexes, China, Stratigraphy, Paleoecology, Molybdemum, Coal, Geochemistry, Oils, Gases.

Contents:
Relationship of radioactive clays to their mineralogical composition, by M. I. Tolstoi
Fractures, magmatism and mineralization in the northeast of the USSR, pt. 2, by V. T. Matveenko and E. T. Shatalov
Soviet Geology, 1961, no. 9: contents, critique, selected publication, availability of translations
Basic features of the tectonic structure of China (preliminary conclusions) by Huang Chi-ch'ing
The Eocene-Oligocene boundary, by I. A. Korobkov
Two ways of speeding up the drawing of structural diagrams, by G. V. Charushin and S. I. Sherman
Molybdenum in a brown coal deposit of Uzbekistan, by N. P. Petrov
Contribution to the geochemistry of crude oils and gases from the mud volcano zone of the Keimir-Chikishlyar area of Western Turkmenia, by I. S. Starobinets
Review section
Reference section.

INTERNATIONAL GEOLOGY REVIEW, VOL. 5, NO. 5, P. 505-662. May 63, lv. 198 refs.
Order from AGI $5.00, $55.00/year

Trans. of [Kozan Chishitsu] (Japan) 1962, v. 12[22] no. 51, p. 16-26; Sovetskaya Geologiya (USSR) 1961, no. 11, p. 9-36, 86-120, 131-145, 158-164; and from mono. Klassifikatsiya Vulkanogennykh Oblomochnykh Gornykh Porod, Moscow, 1962.

DESCRIPTORS: *Geology, Periodicals, Ores, Economic geology, Petrology, Rock (Geology), Indexes, Petroleum, Water supplies, Mining engineering, Coal mines.

Contents:
On the concept of concentration of ore-forming elements and the relationship of their frequency in the earth's crust, by Y. Sekine
A classification of pyroclastics rocks
Soviet Geology, 1961, no. 11: contents, critique, selected publication, availability of translations
A pioneer of Soviet petroleum geology, by M. I. Varentsov
Uraniferous glauconites, by M. F. Kashirtseva and others
On the geology of the southeastern Pamirs, by V. I. Dronov and E. Ya. Leven
Tectonic evolution of the Rudnyi Altai during the Paleozoic, by D. I. Gorzhevskii and M. V. Muratov
Evolution of the Taimyr geosyncline, by V. A. Vakar
Fracture-karst waters in Devonian-carboniferous troughs in North Kazakhstan as the source of a centralized water supply, by B. G. Samsonov and V. V. Chizhikov
Engineering geology characteristics of rock swelling in coal deposits of the USSR, by G. G. Skvortsov and A. K. Korikovskaya
Review section
Reference section.

POTASSIUM SALTS. [1963] 27p. (figs. omitted) 8 refs.
Order from SLA $2.60 63-16209

Trans. of Italian mono. Etiopia"Dallol", n. p., n. d., chap. 11, p. 352-380.

DESCRIPTORS: *Potassium, *Salts, *Ethiopia, *Mining engineering, *Economic geology, Geology, Minerals.

PROFESSIONAL MEETINGS AND TRANSACTIONS OF THE INTERNATIONAL EARTH-PRESSURE CONGRESS LEIPZIG, 1958. [1963] 38p. 21 refs.
Order from SLA $3.60 63-16266

Trans. of Bergakademie (West Germany) 1959 [v. 11] no. 5, p. 297-309.

DESCRIPTORS: *Conferences, *Earth, *Pressure, *Mining engineering, Mathematical analysis, Geology, Geophysics, Elasticity, Plasticity, Deformation, *Shock (Mechanics).

Andon, André d'
THE POTASH MINES OF ALSACE. [1963] 27p. 2 refs.
Order from SLA $2.60 63-14596

Trans. of Industrie Chimique (France) 1946 [v. 33, no. 10] p. 177-181.

DESCRIPTORS: *Mining engineering, *Economic geology, *Salts, *France, Warfare, Damage, Labor, Personnel management, Geology, Potassium, Minerals, Sources.

Ans, Jean, d'
THE FORMATION AND TRANSFORMATION OF THE POTASH SALT DEPOSITS. [1963] [14]p.
Order from SLA $1.60 63-14561

Trans. of [die Naturwissenschaften (West Germany) 1947, v. 34, p. 295-301].

DESCRIPTORS: *Potassium, *Salts, Deposits, *Geochemistry, Bromine, Evaporation, Transformations, Phase studies, *Economic geology, Rock salt.

Autenrieth, H.
IDENTIFICATION OF POTASH MINERALS IN THE MINE BY SELECTIVE DYEING. Scientific Report no. 8. [1963] 4p.
Order from SLA $1.10 63-16115

Trans. of unidentified article, n.p., n.d.

DESCRIPTORS: *Potassium, *Salts, *Minerals, Identification, Dyeing, *Economic geology, Magnesium compounds, Mining engineering, Colors, Mineral oils, Geochemistry, Fertilizers.

Two different methods are described by which it is possible, in a simple manner, to identify usable potash minerals in new mine faces by selective dyeing. The characteristics of the potash ore (course of the deposit, intergrowth, barren pockets, estimation of the K_2O content, etc.) can be determined easily and within a very short time even by untrained personnel with this method. The two methods are based on entirely different principles. In the first method the ore surface is pretreated with a wetting agent which is highly selective for sylvite and it is then coated with a colored mineral oil. In the second method, which is superior to the first with respect to selectivity and applicability, a dark base is first generated on the salt mineral by means of a contrast agent; subsequently, a bright red coating of potassium dipicrylamine is developed on the surfaces of the easily soluble potash salts by application of a magnesium dipicrylamine solution of certain concentrations. (Author)

Baar, A.
CONTRIBUTION TO THE EARTH-MECHANICS AT POTASH-MINING. [1963] 19p. (figs. omitted).
Order from SLA $1.60 63-16267

Trans. of Freiberger Forschungshefte. [Reihe] A. [Bergbau] (West Germany) 1953, 12 July, p. 41-49.

DESCRIPTORS: *Earth, *Mechanics, *Mining engineering, *Salts, Pressure, Deformation, Plasticity, Elasticity, Rock (Geology), Potassium compounds, Magnesium compounds, Supports, Geology.

Bentor, Yaacow K.
RELATIONS BETWEEN THE TECTONIC AND THE PHOSPHATE DEPOSITS IN THE ISRAELI NEGIEV (NEGEV). [1963] 15p. (figs. omitted) 2 refs.
Order from SLA $1.60 63-16094

Trans. of mono. Congres Geologique International (no. 19) Algiers, 1952. [Comptes Rendus] 1953, sect. 11, v. 11, p. 93-101.

DESCRIPTORS: *Phosphates, *Economic geology, *Israel, Petrology, Geology.

Dreyer, Wolfgang and Borchert, Hermann.
SIMILARITY MECHANICS: A CONTRIBUTION TO ROCK PHYSICS AND ROCK PRESSURE RESEARCH. [1963] 17p. (figs. omitted) 14 refs.
Order from SLA $1.60 63-16270

Trans. of Bergb[au]wiss[enschaften] (West Germany) 1962, v. 9, no. 15/16, p. 356-361.

DESCRIPTORS: *Rock (Geology), *Rock salt, *Mechanical properties, Fracture (Mechanics), Pressure, Numerical analysis, Geophysics, Geology.

Gavrilov, A. A. and Lavrikov, A. S.
IMPROVING THE ORGANIZATION OF GEOLOGICAL INVESTIGATIONS. 18 June 63, 10p. JPRS: 19739.
Order from OTS $0.50 63-31073

Trans. of #Geodeziya i Kartografiya (USSR) 1963, no. 4, p. 38-42.

DESCRIPTORS: *Research program administration, *Geological survey, Terrain, Geodesics, Surveying, Mapping.

Gold, Otto.
THE FIRST OPEN PIT LIGNITE MINE IN ITALY NEAR CASTELNUOVO, SOUTH OF FLORENCE. [1963] 35p. (figs. omitted).
Order from SLA $3.60 63-16204

Trans. of special reprint of Braunkohle, Wärme und Energie (West Germany) 1956 [v. 8] no. 9/10, p. 165-174; no. 11/12, p. 221-227.

DESCRIPTORS: *Coal mines, *Italy, *Mining engineering, *Economic geology, Mining equipment, Design, Operation, *Lignite.

Höfer, Karl-Heinz.
CONTRIBUTION TO THE QUESTION OF THE STABILITY OF MASSIFS AT POTASH MINING. [1963] [138]p. (figs. omitted) 62 refs.
Order from SLA $10.50 63-16268

Trans. of Freiberger Forschungshefte. [Reihe] A. [Bergbau] (West Germany) 1958, v. 100, 148p.

DESCRIPTORS: *Mining engineering, *Supports, Stability, *Salts, Rock (Geology), Earth, Pressure, *Rupture, *Deformation, Creep, Elasticity, Plasticity, Geophysics, Potassium.

Kalinenko, V. O.
THE ORIGIN OF FERRO-MANGANESE CONCRETIONS (Proiskhozhdenie Zhelezo-Margantsevykh Konkretsii) tr. by Ivan Mittin. 1962 [16]p. 5 refs.
Order from OTS or SLA $1.60 62-32149

Trans. of Mikrobiologiya (USSR) 1949, v. 18, no. 6, p. 528-532.

DESCRIPTORS: Sources, *Iron compounds, *Manganese compounds, *Bacteria, Geology, *Paleoecology, Microorganisms.

During microscopic studies of all preparations and drops with undisturbed natural structure of mud, all stages of the formation of ferro-manganese concretions are visible. Dimensions of original concretions are microscopical and they are usually ignored by geologists; they begin to note a concretion when it attains dimensions of a broom corn millet grain (Panicum miliaceum). Grain is 2 mm broad by 3 mm long. The forming activity of bacteria can be seen on the stages preceding the dimensions of 2 mm x 3 mm. Bacteria produce a concretion by means of collecting single colloidal flakes and by cementing the spaces with a stable mat of their threads which are impregnated with silicon, manganese, iron and calcium. Bacteria provide these biomineral complexes a spheritic or cake-like form which is so characteristic of bacterial colonies. Under laboratory conditions, pure cultures of thread-like ferro-bacteria isolated from the Kapal Lakes form micro-concretions in a period of several weeks totally resembling the natural concretions. It has been established through the observations in nature that during eight or nine years in lakes there may be developed ferro-manganese concretions of a pigeon egg size (1 inch length by 3/4 inch diameter). On this basis probably industrial exploitation of biogenic iron is possible. (Author)

Leonardos, Othon Henry.
RESOURCES OF BRAZIL IN MINERAL PHOSPHATES. [1963] 29p. 36 refs.
Order from SLA $2.60 63-14580

Trans. of Mineração e Metalurgia (Brazil) 1945, v. 8, no. 46, p. 263-268.

DESCRIPTORS: *Phosphates, *Economic geology, *Brazil, Apatite, Minerals, Deposits, Geological survey.

Matheron, G.
THE USEFULNESS OF STATISTICAL METHODS IN MINING RESEARCH. [1963] 15p. (figs. omitted) 6 refs.
Order from SLA $1.60 63-16129

Trans. of [paper presented at] Congrès du Centennaire de la Société de l'Industrie Minérale, Paris, June 55.

DESCRIPTORS: *Minining engineering, *Economic geology, Ores, Distribution, Statistical analysis, *Statistical processes.

Stishov, S. M.
THE CORE: MANTLE DISCONTINUITY (O Granitse Yadro-Mantiya). 4 Apr 63 [7]p. 11 refs. AID Rept. T-63-47; AD-402 264.
Order from OTS or SLA $1.10 63-19209

Trans. of #Geokhimiya (USSR) 1962. no. 11, p. 989-992.

DESCRIPTORS: *Lithosphere, *Geochemistry, Phase studies, Silicon, Metalloids, Theory, Earth, Liquid metals, Silicides, Silicates, Minerals.

A discussion of the hypothesis of a metallized silicified core

Zimmermann, Bernhard.
PLANNING AN OPENING UP OF SURFACE MINING AT INDEN. [1963] 27p. (figs. omitted) 5 refs.
Order from SLA $2.60 63-16203

Trans. of Braunkohle, Wärme und Energie (West Germany) 1959, v. 11, no. 1, p. 1-14.

DESCRIPTORS: *Mining engineering, *Coal mines, Well drilling, Geological survey, Preparation, Mining equipment.

Oceanography

Mikhailov, S. V.
PROSPECTS FOR DEVELOPING THE RICHES OF THE OCEAN. 1 Apr 63 [13]p. JPRS: 18475.
Order from OTS $0.50 63-21468

Trans. of Priroda (USSR) 1963 [v. 52] no. 1, p. 35-43.

DESCRIPTORS: *Oceans, Sources, Animals, Plants (Botany), Chemicals, Fuels, Minerals, Transportation, Marine biology, *Oceanology.

Emphasis is placed on the development of the role of the oceans of the world as a potential source for the increasing needs of man. Methods are discussed for the rational utilization of animal and plant products, especially fish. The importance of marine chemistry in the extraction of minerals is discussed. It is noted that the basic deposits of oil and gas are located beneath the seas. Tidal power stations and hydrothermal stations are discussed as means of utilizing the energy of the ocean as a source of power. The increase and importance of marine transportation are also noted.

Yashnov, V. A.
THE ORIGIN OF THE SPECIES CALANUS FINMARCHICUS S. L., tr. by Peter B. Willis. [Paper] Delivered at a Meeting of the Jubilee Session of the Moscow Society of Investigations of Nature, 24 Dec 55. July 59 [9]p. 16 refs. [DSIR] NLL M. 8863.
Order from OTS or SLA $1.10 62-32833

Trans. of [Zoologicheskii Zhurnal] (USSR) [1958] v. 37, no. 6, p. 838-845.

DESCRIPTORS: *Crustacea, Taxonomy, *Evolution, *Paleoecology, Marine biology, Morphology, Distribution, Oceanography, Pacific Ocean, Atlantic Ocean, Arctic Ocean.

At the present time the super species C. finmarchicus is represented in the seas of the northern hemisphere by four close species - C. finmarchicus s. str. C. glacialis, C. helgolandicus and C. pacificus. The species of C. finmarchicus s. l. are divided into two groups, consisting of genetically close species; to the first group belong C. finmarchicus s. str. and C. glacialis, to the second group - C. helgolandicus and C. pacificus. Calanus finmarchicus s. str., distributed in the seas of the Atlantic Ocean is the most primitive species. In the pliocene age two boreal species were widely distributed, from one of which originated the present C. finmarchicus s. str. and C. glacialis from the other the present C. helgolandicus and C. pacificus. The amphiboreal C. helgolandicus and C. pacificus are relics of the pliocene age. The arctic C. glacialis was formed in the ace age. (Author)

Zaitsev, G. N.
ON THE EXCHANGE OF WATER BETWEEN THE ARCTIC BASIN AND THE PACIFIC AND ATLANTIC OCEANS, tr. by E. R. Hope. Dec 61, 3p. 3 refs. DSIS T 363 R.
Order from NRCC NRCC C-3875

Trans. of Okeanologiya (USSR) 1961, v. 1, no. 4, p. 743-744.

DESCRIPTORS: *Ocean currents, *Arctic Regions, *Pacific Ocean, *Atlantic Ocean, Water, Distribution, Oceanology.

Physics of the Atmosphere

PHENOMENA IN THE UPPER ATMOSPHERE: COMPILATION OF ABSTRACTS. Rept. 34 reviewing Soviet Developments in Selected Problems in Astrophysics and Geophysics. 15 May 63 [27]p. AID Rept. P-63-61.
Order from OTS or SLA $2.60 63-19696

DESCRIPTORS: *Abstracts, *Upper atmosphere, *Solar radiation, Ionosphere, Electromagnetic pulses, *Atmospheric electricity, Scientific satellites, Data, *Meteorology, Astrophysics, Geophysics.

Contents:
Solar radiation and the ionosphere
Telluric currents
Atmospheric electricity
Satellite and missile data
Meteorology of the upper atmosphere.

Gringauz, K. I. and Rudakov, V. A.
MEASUREMENTS OF THE ELECTRON CONCENTRATION IN THE INOSPHERE TO ALTITUDES OF 420-470 km, MADE DURING THE IGY BY MEANS OF RADIOWAVES EMITTED BY GEOPHYSICAL ROCKETS OF THE SOVIET ACADEMY OF SCIENCES (Izmereniya Elektronnoi Kontsentratsii v Ionosfere do vysot 420-470 km, Provedennye vo Vremia MGG pri Pomoshchi Radiovoln, Izluchavshikhsya s Geofizicheskikh Raket AN SSSR) tr. by David Kraus. June 61 [22]p. 18 refs. AmMetSoc-T-R-363.
Order from OTS or SLA $2.60 63-19733

Trans. of Iskusstvennye Sputniki Zemli (USSR) 1961, v. 6, p. 48-62.
Another trans, is available from OTS or SLA $4.60 as 62-14239 [1962] [45]p.

DESCRIPTORS: *Ionosphere, *Electron density, Distribution, Measurement, *Atmospheric sounding, Sounding rockets, *Radio waves, Propagation, Interferometers, Oscilloscopes, *Magneto-optic effect.

For abstract see Technical Translations 8: 140, 1962.

Myurk, Kh.
ON THE NEW FORMULA OF THE INTENSITY OF RADIATION AND NEW CHARACTERISTICS OF THE TRANSPARENCY OF THE AIR. 25 Apr 63 [9]p. 2 refs. FTD-TT-63-178.
Order from OTS or SLA $1.10 63-19658

Unedited rough draft trans. of Issledovaniya po Fizike Atmosfery (Estonian SSR) 1959, v. 1, p. 7-14.

DESCRIPTORS: *Solar radiation, Intensity, *Atmosphere, Optical properties, Visibility, Equations.

The author derives a formula of the intensity of the integral radiation by assuming that the coefficient of the weakening of the integral radiation, with invariable transparency of the atmosphere, is a function of the number of masses m. After determining the suitable conditions relative to the weakening of the integral radiation it was possible to derive a formula of intensity sufficiently well in agreement with actuality. This formula contains a magnitude almost independent of m, which one can make use of as a new characteristic of the atmosphere. (Author)

ENGINEERING

PARTIAL PRESSURE ANALYSES OF THE FINAL PRESSURE OF HIGH-VACUUM PUMPS (MEASURED WITH AN OMEGATRON). [1963] [15]p. 5 refs.
Order from SLA $1.60 63-14483

Trans. of unidentified mono. (brochure) by E. Leybold's Nachfolger, Köln/Bayental, 1958.

DESCRIPTORS: *Vacuum pumps, *Diffusion pumps, Oils, Mercury, Pressure, Measurement, *Gas analysis, *Pressure gages, *Mass spectroscopy

Mel'nikov, N. V.
PRIMARY PROBLEMS IN MINING SCIENCE (Pervoocherednye Zadachi Gornoi Nauki). Apr 63 [13]p. RTS-2241.
Order from OTS or SLA $1.60 63-19138

Trans. of Akademiya Nauk SSSR. Vestnik, 1962 [v. 32] no. 6, p. 69-74.

DESCRIPTORS: *Mining engineering, *Ores (Metal sources), *Ores (Non-metallic), Industrial equipment, Industrial training, Economics, Industrial plants, Production.

Pokrovskii, G. I.
WAYS OF INCREASING THE USEFUL ENERGY EFFICIENCY OF H.E. IN EXCAVATION EXPLOSIONS (Puti Povyshcheniya Koefitsienta Ispol'zovaniya Energii Vzryvchatykh Veshchestv pri Vzryvakh na Vybros) tr. by Sergey Shewchuck. Jan 62, 24p. (foreign text included) 2 refs.
Order from OTS or SLA $1.60 UCRL Trans-770(L)

Trans. of Gornyi Zhurnal (USSR) 1952, no. 11, p. 21-24.

DESCRIPTORS: Energy, Explosions, *Explosive materials, *Underground explosions, Cratering, Soil mechanics.

Vlasov, O. E. and Smirnov, S. A.
BASES FOR CALCULATING THE BREAKING OF ROCKS WITH AN EXPLOSION. CHAP. II. THE EHDA METHOD FOR SCALE MODELS. 12 Mar 63 [19]p. 2 refs. FTD-TT-62-1846.
Order from OTS or SLA $1.60 63-19635

Unedited rough draft trans. of mono. Osnovy Rascheta Drobleniya Gornykh Porod Vzryvom, Moscow, 1962, p. 32-43.

DESCRIPTORS: *Explosion effects, *Models (Simulations), *Electric potential, Electrical equipment, Electrical properties, Design, Test methods, Tests, Measurement, Hydrodynamics, *Rock (Geology), Fracture (Mechanics), Blast.

Aeronautical Engineering

CIVIL AVIATION, 1962 [VOL. 19] NO. 11: SELECTED ARTICLES. 15 Mar 63 [24]p. FTD-TT-62-1924. AD-402 432.
Order from OTS or SLA $2.60 63-19474

Unedited rough draft trans. of Grazhdanskaya Aviatsiya (USSR) 1962 [v. 19] no. 11, p. 10-13, 28-29.

DESCRIPTORS: *Civil aviation, *Aircraft, Jet planes, *Airplane engines, Jet engines.

Contents:
The AI, family of Soviet Avia engines, by A. G. Ivchenko
AN-14, Pchelka (the Clod), by N. Vladimirov
Diskoplane, flying machines of the future, by B. Broude.

Efimov, I. A. and Drakin, I. I.
THE STABILITY OF A CYLINDRICAL SANDWICH SHELL WITH A CORRUGATED METAL FILLER EXPOSED TO THE JOINT ACTION OF AXIAL FORCE AND EXTERNAL PRESSURE BEYOND THE ELASTIC LIMIT [AND] A METHOD FOR ECONOMIC ANALYSIS OF THE RELIABILITY OF PARTS AND SYSTEMS OF FLYING VEHICLES. 10 Apr 63 [30]p. 21 refs. FTD-TT-63-203.
Order from OTS or SLA $2.60 63-19527

Unedited rough draft trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Aviatsionnaya Tekhnika (USSR) 1962 [v. 5] no. 3, p. 79-86, 177-186.

DESCRIPTORS: *Cylindrical bodies, *Structural shells, Sandwich construction, *Stability, Pressure, Load distribution, Aircraft, *Aircraft equipment, *Reliability, Reliability (Electronics), Economics, *Quality control.

Ivanchenko, A. I.
A SENSITIVE ELEMENT FOR A SELF-CONTAINED CONTROL SYSTEM. 12 Mar 63 [5]p. FTD-TT-62-1896; AD-299 670.
Order from OTS or SLA $1.10 63-19184

Unedited rough draft trans. of Soviet patent 146057 (722318/26) 18 Mar 61.

DESCRIPTORS: *Aircraft equipment, *Control systems, Internal guidance, *Gyroscopes, Sensitivity.

The sensitive element of a self-contained gyro control system without platform stabilization is described. It differs in that, for the purpose of making it possible to determine the rate and angle of rotation relative to the axis of sensitivity, employed in it are two heavy gyroscopes with center of gravity displaced along the axis of the inner frame. (Author)

Konovalov, B. A. and Karavanov, V. F.
THE CALCULATION OF CONICAL SHELLS BY THE VARIATIONAL METHOD OF V. Z. VLASOV [AND] THE EQUATIONS OF AXISYMMETRICAL THREE-LAYER SHELLS WITH A LIGHT FILLER. 11 Mar 63 [72]p. 21 refs. FTD-TT-62-1652. AD-400 520.
Order from OTS or SLA $7.60 63-19172

Unedited rough draft trans. of Aviatsionnyi Institut, Moscow. Trudy (USSR) 1960 [v. 130] p. 19-56, 110-132.

DESCRIPTORS: *Conical bodies, *Structural shells, Deflection, Stresses, Torque, Deformation, *Calculus of variations, Cylindrical bodies, Spheres, Aircraft, Structural parts, *Differential equations.

Turati, Nino
HEAVIER-THAN-AIR SAUCER-SHAPED AIRCRAFT, tr. by J. B. 22 Apr 63, 5p. (figs. omitted).
Order from OTS or SLA $1.10 63-19279

Trans. of Italian patent 518,844, cl. VIII, filed 5 June 54, granted 9 Mar 55, printed Sep 57.

DESCRIPTORS: *Aircraft, Design, Operation.

The invention involves a heavier-than-air aircraft, characterized in that it is provided with a rotor for producing the lifting power, the braking effect during descent and the translational movement, and provided with an inertia mass rotating in the opposite direction with respect to the rotor and capable of eliminating the reaction torque, balancing the pull of the motor and acting also as a horizontal gyroscope. (Author)

Chemical Engineering

DECOMPOSITION OF CRUDE PHOSPHATES WITH HNO_3. [1963] 6p. 24 refs.
Order from SLA $1.10 63-16271

Trans. of mono. Düngemittel (Fertilizers) n. p., n. d., p. 162-165.

DESCRIPTORS: *Phosphates, Fertilizers, *Nitric acid, Decomposition, Chemical engineering.

FURTHER INVESTIGATIONS WITH THE 1000 AMP. DISC CELL FOR OBTAINING SODIUM METAL FROM AMALGAM. 28 Sep 48, 4p.
Order from OTS or SLA $1.10 63-10962

Trans. from unidentified German mono. pub. by I. G. Farbenindustrie A. G., Frankfurt a. M., n. d. (PB-73504E).

DESCRIPTORS: *Sodium, Electrolysis, *Electrolytic cells, Design, Operation, Fused materials, Sodium compounds, Hydroxides, Carbonates, Halides, Oxides.

PROCESS AND APPARATUS FOR THE SEPARATION OF SOLID SUBSTANCES OF DIFFERENT SPECIFIC GRAVITY IN A SUSPENSION AGENT. [1963] 6p.
Order from OTS or SLA $1.10 63-14520

Partial trans. of French patent 801,277, 31 July 36 (f. 14 Jan 36) by N. V. Domaniale Mijn Maats.

DESCRIPTORS: *Material separation, Solids, Density, *Flotation, Colloids, Conveyors, *Magnetic materials, Separation.

PROCESS FOR MANUFACTURE OF A SUBSTANCE FOR THE EXCHANGE AND REMOVAL OF BASES, AND APPLICATIONS OF THIS SUBSTANCE. [1963] 7p.
Order from OTS or SLA $1.10 63-14518

Trans. of French patent 784,348, gr. 14, cl. 8, by N. V. Octrooien Maatschappij "Activit", Netherlands, appl. 19 Jan 35, granted 29 Apr 35, pub. 22 July 35 (patent appl. deposed in the Netherlands, 19 Jan 34 and 19 Dec 34).

DESCRIPTORS: Ions, Metals, Hydroxides, *Ion exchange, Adsorbants, *Humic acids, Manufacturing methods, Synthesis (Chemistry), Carbon, Coal, Sulfuric acid.

According to the invention one obtains substances with acidic properties which have a great power of adsorption, exchange and fixation of bases, and which may also be called humus, humic substances, and humic acids, having an unknown composition and variable properties. The humic substances manufactured according to the process have an activity which is much greater than that of activated charcoal in certain cases. This activity is revealed by a great power of exchanging ions. (Author)

PROCESS FOR THE MANUFACTURE OF EXTREMELY PURE ELECTRICALLY FUSED MAGNESIA. [1963] 9p. (figs. omitted) 1 ref.
Order from OTS or SLA $1.10 63-14644

Trans. of French patent 897,634, gr. 13, cl. 2, by Alais, Froges, and Camargue Chemical and Electrometallurgical Products Co., appl. 20 Apr 43, granted 30 May 44, pub. 27 Mar 45.

DESCRIPTORS: Production, *Magnesium compounds, Oxides, *Fused materials, Electric furnaces, *Sea water, Chlorides, Sodium compounds, Sulfates, Potassium compounds, Processing, Physical properties, Contamination, Inhibition.

The invention concerns a process of industrial fabrication of extremely pure electrically fused magnesia of a degree of purity generally higher than 99%, which consists in treating the already relatively pure magnesian material in an electric furnace in which the heating is obtained, at the beginning of the functioning of the furnace, by the passage of the current in graphite resistance elements placed between the electrodes, a and in utilizing the resulting ingot, exclusive of the calcined magnesia and amorphous magnesia surrounding the ingot after removal from the mold. (Author)

PROCESS FOR SEPARATION OF AMMONIUM CHLORIDE FROM ITS MIXTURES WITH ALKALI-METAL SALTS. [1963] 10p.
Order from OTS or SLA $1.10 63-14512

Trans. of Belgian patent 404,537, appl. 2 Aug 34, issued 29 Sep 34 (French patent appl. 21 Dec 33) by Société d'Études pour la Fabrication et l'Emploi des Engrais Chimiques, Paris.

DESCRIPTORS: *Ammonium compounds, *Chlorides, Alkali metal compounds, Salts, Mixtures, Crystals, Separation, *Flotation, *Foams, Production, Absorption.

The invention involves a process for the separation of ammonium chloride from its mixtures with alkali-metal salts by froth flotation of the salt mixture suspended in a suitable brine, preferably without action upon the composition of the saline mixture, the ammonium chloride crystals being entrained with the froths--whose formation characterizes this process--and the other salts in the mixture forming a deposit during the flotation. (Author)

USSR INDUSTRIAL DEVELOPMENT: SOVIET CHEMICAL INDUSTRY NO. 77. 10 June 63, 51p. JPRS:19614.
Order from OTS $1.50 63-31012

Trans. of Byulleten' Tekhniko-Ekonomicheskoi Informatsii (USSR) 1963, no. 2, p. 16-18; and from Pravda, Moscow (USSR) 1963, 27 Feb, p. 2; 5 Mar, p. 1, 2; Izvestiya (USSR) 1963, 2 Mar; Ekonomicheskaya Gazeta (USSR) 1963, no. 8[81] p. 4, 15, 38; no. 9[82] p. 5, 6.

DESCRIPTORS: *Industrial production, *Chemical industry, Chemical engineering, *Plastics industry, Polyethylene plastics, Lactams, *Carbon black, *Expanded plastics, *Isocyanate plastics, *Textile industry, *Industrial plants, Construction, Economics, *Fibers (Synthetic) *Petroleum industry, Machines, Tires, Management engineering, Fluidized solids, *Automation, *Potassium compounds, Chlorides, Dehydration, Wood.

Contents:
Start-up of new polyethylene production at Salavat
Start-up of caprolactam production at Novokemerovo, by N. Vdovin
The importance of carbon black in the chemical industry, by P. Burerkin and A. Kel'n
The use of polyurethane foam in the textile industry, by P. Burmistrov and others
Correcting disorganization at the Ryazan' artificial fiber plant, by I. Azovkin
Obstacles to the growth of petrochemistry, by Kh. Markaryan
Inadequate use of plastics in machine building, by A. Ryabenko and A. Kogan
An example of ill-considered construction, by N. Yakovchuk
Chemical fibers today and tomorrow, by V. Mukhin
Successful start-up of tire production at Dnepropetrovsk, by B. Zolotov
Unsatisfactory management at the Krasnoyarsk tire plant, by M. Ul'yanov
Automation of a fluidized bed arrangement for drying potassium chloride, by R. A. Kulle and L. V. Lopachenok
The need for better organization at the Bratsk wood industrial combine, by A. Merkulov.

USSR INDUSTRIAL DEVELOPMENT: SOVIET CHEMICAL INDUSTRY NO. 79. 19 June 63, 63p. JPRS: 19743.
Order from OTS $1.75 63-31075

Trans. of 31 selected articles from Mar 63 issues of 15 Russian newspapers.

DESCRIPTORS: *Industrial production, *Chemical industry, *Chemical engineering, *Paints, Filters (Liquid), Driers (Apparatus), *Industrial plants, Construction, Economics, Fertilizers, Nitrogen, *Fillers, Petroleum, *Synthetic rubber, *Salts, Deposits, *Shales, *Benzenes, *Plastics, *Acrylic resins, Butanols, Ammonium compounds, Sulfates, *Sulfuric acid, *Cellulose, Sulfites, *Wastes (Industrial) *Pyrites, *Motion-picture film, *Cordage, Impregnation, Ultrasonic radiation, *Composite materials, *Dolomite, *Cleaning compounds, Lactams.

Contents:
Enamels from lean pastes
Construction of the Grodno nitrogen fertilizer plant
Fluidized filtration and drying of paints
New petroleum-base filler for synthetic rubber
Construction of a nitrogen fertilizer plant in Stavropol'-on-the-Volga
Lagging development of the chemical industry in the Kuznetsk basin
New salt deposits in the Volgograd area
Chemistry of the Estonian Donets Basin
Problems of "large-scale chemical industry"
New shop for rectification of crude benzene
Patriotic undertaking by chemists and builders
Problems in the production and processing of plastics
Origin of Lavsan polymer
Organized theft from the treasury
Lag in the startup of the Dankov chemical plant
Lagging construction of the butyl alcohol shops at the Salavat petrochemical combine
Lagging construction of the ammonium bisulfite shop at the Rustavi caprolactam plant
Lagging construction at the erevan synthetic rubber plant
Millions in waste from production of sulfuric acid and sulfite cellulose
For improvement in construction and development of the chemical industry in Permskaya oblast
Expansion of the erevan synthetic rubber plant imeni kirov
Highly sensitive motion picture film
Use of ultrasonics to impregnate rope with resins
Progress in the chemical industry of the Moscow area
Chemical construction in Moskovskaya oblast
Plastic armor
Chinarskoe dolomite deposit near dushanbe in tadzhikistan
Bottlenecks in the large-scale chemical industry
Production of washing powder in Turkmeniya
Lagging construction of caprolactam shop in Rustavi
Faster construction of chemical enterprises

USSR INDUSTRIAL DEVELOPMENT: SOVIET CHEMICAL INDUSTRY NO. 76. 7 June 63, 23p. JPRS:19604.
Order from OTS $0.75 63-31008

Trans. from Rabochaya Gazeta (USSR) 1963, 20 Mar, p. 1-2; 2 Apr, p. 2; 4 Apr, p. 2, 4; Stroitel'naya Gazeta (USSR) 1963, no. 35(4184) 22 Mar, p. 1.

DESCRIPTORS: *Industrial production, *Chemical industry, *Chemical engineering, *Plastics industry, Economics, Chemistry, *Industrial plants, Construction, *Tires, Maintenance, *Textile industry, Fertilizers, Nitrogen, *Pipes, *Glass textiles, Filament wound construction.

Contents:
Need for specialization in the conversion of plastics, by V. Bogolyubov
Accelerated development of chemistry
Lag of the Priluki plastics plant, by P. Vernigora
Better organization of tire repair, by N. Titarenko
Progress in the development of large-scale chemical industry
Special control of construction of the Khar'kov plastics plant

Party organization at the Gorlovka nitrogen fertilizer plant in the struggle for the development of large-scale chemical industry, by E. Khristolyubova
Pipes from glass plastics, by Sergeev-Vasil'ev.

USSR INDUSTRIAL DEVELOPMENT: SOVIET CHEMICAL MACHINE BUILDING NO. 25. 26 June 63 [71]p. JPRS: 19865.
Order from OTS $1.75 63-31117

Trans. of Referativnyi Zhurnal. Otdel'nyi Vypusk 47: Khimicheskoe Mashinostroenie (USSR) 1963, no. 1, p. 1-2; and 12 selected articles from 1963 issues of 8 Russian newspapers.

DESCRIPTORS: *Industrial production, *Chemical engineering, *Machines, *Corrosion inhibition, Calcium compounds, Hypochlorites, *Plastics, *Conveyors, Industrial plants, Economics, Rubber, Management engineering, Supplies, Automation, *Safety valves.

Contents:
Means of protection against corrosion for calcium hypochlorite equipment
An automatic rotor line for pressing articles of plastic, by N. Milenina
Misuse of the facilities of large chemical machine-building plants
Rubber-reclaiming equipment from the frunze plant in Sumi
Praise of Kiev Bol'shevik chemical machine-building plant
Activity of the Uralkhimmash chemical-machine-building plant
Activities of the Kiev Bol'shevik chemical machine-building plant
Inefficient management at the Serpukhov chemical machine-building plant, by V. Ivlev
Lack of spare parts in the chemical industry, by A. Fedyakin and F. Romanov
The general situation in Ukraine chemical mahine-building industry
Inadequate mechanization at the Saratov machine-building plant, by Ef. Klenov and F. Kokh
Chemical machine-building in the Leningrad area, by G. Akaimov and others
Anticorrosion screws for safety valves
Remarks on the Lugansk chemical machine-building plant.

Ando, Jumpei and Matsuno, Sei-ichi.
STUDIES ON CALCINED MAGNESIUM PHOSPHATE FERTILIZER. [1963] [15]p. (foreign text included).
Order from SLA $1.60 63-16147

Trans. of [Kogyo Kagaku Zasshi] (Japan) 1959 [v. 62, no. 1] p. 59-63.

DESCRIPTORS: *Magnesium, *Phosphates, *Fertilizers, Sulfuric acid, Sulfates, Calcium, Chemical reactions, Tests.

By adding $MgSO_4$ alone to phosphate rock before calcination, an incompletely defluorinated product of low citric solubility is obtained. If H_2SO_4 alone is added to the calcining charge a large excess is required to bring about complete decomposition of the phosphate rock because of the tendency of H_2SO_4 to escape before heat-stable compounds are formed. Even if the rock is decomposed the product tends to be high in calcium pyrophosphate and its citric solubility therefore low. The experimental results obtained suggest that H_2SO_4 should be added only in sufficient quantity to react with the excess calcium constituent of the rock. Besides, the P_2O_5 equivalent of $MgSO_4$ should be introduced into the calcining charge. The range of suitable reaction temperatures lies between 800°C and 1000°C. Further investigations are required to ascertain the most suitable water vapor concentration in the calcining atmosphere. It is not impossible that the moisture contained in coal and heavy oil combustion gases (5-10% H_2O) is sufficient to bring about satisfactory defluorination without introduction of steam. If H_2SO_4 is not homogeneously distributed or if the calcination is incomplete, residual calcium pyrophosphate becomes a problem of its solubility-lowering effect on the product. (Author)

Canguilhem C., Hector.
SOME RESULTS OBTAINED IN THE FLOTATION OF NON-METALLIC MINERALS. [1963] 15p.
Order from SLA $1.60 63-14551

Trans. of Rev[ista de] Ing[enieria] Quim[ica] (Chile) 1943. v. 2, no. 2, p. 17-28.

DESCRIPTORS: *Flotation (Separation), *Ores (Non-metallic), *Minerals, Limestone, Phosphates Apatite, Calcite, Cements, Manufacturing methods

Francesconi, Octacilio.
ALKALI INDUSTRY IN BRAZIL. [1963] 9p. (figs. omitted) 10 refs.
Order from SLA $1.10 63-14032

Trans. of Mineração e Metalurgia (Brazil) 1945, v. 8, no. 46, p. 273-277.

DESCRIPTORS: *Chemical industry, *Brazil, *Alkali metals, Chemical engineering, Alkali metal compounds, Sodium compounds, Hydroxides, Industries.

Gewecke, Fritz.
PROCESS FOR THE MANUFACTURE OF ALKALI CARBONATES IN CONNECTION WITH COMPLEX ALKALI FLUORIDES. [1963] 2p.
Order from OTS or SLA $1.10 63-14647

Trans. of German patent 724,946, cl. 12.1, gr. 13, filed 1 June 35, issued 23 July 42, pub. 10 Sep 42, by Deutsche Solvay-Werke A. G., Zweigniederlassung Alkaliwerke Westeregeln.

DESCRIPTORS: *Alkali metal compounds, *Potassium compounds, *Carbonates, *Bicarbonates, Manufacturing methods, Synthesis (Chemistry), Alkaline earth compounds, Silicon compounds, Fluorides.

The invention concerns a cyclic process for the recovery of alkali carbonates and/or bicarbonates from complex alkali-fluorides and alkaline-earth carbonates in the presence of water, in which for one mole of complex alkali fluoride 3 moles of alkaline-earth carbonates are used whereby the decomposition takes place in two steps; namely, that first two moles of carbonate react and are made to react with a third mole of carbonate without the need of filtering in

between. The reaction between a complex fluoride and an alkaline-earth carbonate with heating is so advantageously undertaken that there results immediately a saturated or practically saturated solution of carbonates or bicarbonates. (Author)

Grubner, O., Ralek, M., and Jiru, P.
PREPARATION AND PROPERTIES OF MOLECULAR SIEVES OF THE A TYPE. [1963] 7p. 17 refs.
Order from SLA $1.10 63-14396

Trans. of Chemicky Prumysl (Czechoslovakia) 1961, v. 11[36] [no. 10] p. 521-523.

DESCRIPTORS: *Organolites, Molecules, *Absorbents, Synthesis, *Molecular structure, Crystallization, Ions, Desiccants, Material separation, *Purification, Ion exchange, Absorbents.

The present note relates the results of research on the preparation of molecular sieves 3.8 A, 4 A, and 5 A, on the testing of their properties. Detailed instructions are given which will permit other researchers to produce, with simple equipment, molecular sieves equal in quality to similar foreign products. Possibilities of industrial production of molecular sieves discussed. (Author)

Hermann, C.
DISSOLVING OF SYLVINITE; COOLING AND CRYSTALLIZATION OF THE SOLUTIONS; WASHING OF POTASSIUM CHLORIDE. [1963] [17]p.
Order from SLA $1.60 63-14566

Partial trans. (excerpts) of mono. Fortschritte in der Kali-Industrie (Progress in the Potassium Industry) Leipzig, 1927, p. 24-27, 58-61, 76-77.

DESCRIPTORS: *Potassium compounds, *Chlorides, *Minerals, Solutions, *Cooling, *Crystallization, Solubility, Sodium compounds, Chemical engineering, Fertilizers.

Huber, Hans.
THE SIGNIFICANCE OF A METAL PHOSPHATE CHEMISTRY. [1963] 21p. (refs. omitted).
Order from SLA $2.60 63-16148

Trans. of Chemiker Zeitung (West Germany) 1959, v. 83, no. 3, p. 76-81.

DESCRIPTORS: *Phosphates, Metals, Fertilizers, Aluminum compounds, Iron compounds, Chemistry, *Metallic compounds.

Hugh, Gerhard Gustav and Hasselder, William.
METHOD FOR THE PRODUCTION OF DICALCIUM PHOSPHATE FROM ACIDIC, FLUORINATED, CALCIUM AND PHOSPHORIC ACID-CONTAINING SOLUTIONS. [1963] 4p. 10 refs.
Order from OTS or SLA $1.10 63-14567

Trans. of German patent 812,253, cl. 16, gr. 2 p. 26434 IV b/16 D, pat. as of 24 Dec 48, pub. 28 June 51, priority of registration in Belgium as of 17 June 47.

DESCRIPTORS: *Fertilizers, Production, *Calcium compounds, *Phosphates, Synthesis (Chemistry), Calcium, Fluorides, Phosphoric acids, Solutions, Hydrogen ion concentration.

The invention relates to a method for the production of dicalcium phosphate by a preferably continuous addition of acidic fluorinated calcium-and phosphoric acid-containing solutions to a neutralizing agent in an acidic medium, and separation of the precipitated calcium phosphate from the solution, characterized by maintaining the pH value of the acidic medium during neutralization between 1.5 and 2.5, with 2.0 being the optimum. (Author)

Jagitsch, Robert.
ON THE REACTION OF ROCK SALT WITH ROASTING GAS. [1963] 19p. (figs. omitted) 9 refs.
Order from SLA $1.60 63-14820

Trans. of mono. Festskr[ift Tillägnad] J. Arvid Hedvall [Gothenburg] 1948, p. 303-318.

DESCRIPTORS: *Rock salt, *Sodium compounds, *Chlorides, *Gases, *Sulfur compounds, *Oxides, Temperature, *Reaction kinetics.

In the absence of moisture, the reaction between sodium chloride and roasting gas proceeds with the formation of sodium sulfate and chlorine at a constant linear velocity if the temperature and SO_2 concentration are maintained constant; i.e., the velocity of the process is determined by the rate of a phase-boundary process and is not retarded by the reaction products. The reaction velocity is a function of the gas composition and the temperature. (Author)

Kheifets, Ya. M.
POTASH CHEMISTRY IN THE U.S.S.R. AND ITS PROSPECTS [1963] 7p.
Order from OTS or SLA $1.10 63-14573

Trans. of Kalii (USSR) 1932, no. 1, p. 26-27.

DESCRIPTORS: *Chemical industry, *Potassium compounds, Hydroxides, Chemistry, Industrial research.

Langauer, Donat.
THE TRANSFORMATION OF LANGBEINITE. III. THE REDUCTION OF LANGBEINITE BY COAL. [1963] 33p. 30 refs.
Order from SLA $3.60 63-14614

Trans. of Przemysl Chemiczny (Poland) 1937, v. 21, p. 228-237.

DESCRIPTORS: *Potassium compounds, *Sulfates, *Magnesium compounds, *Reduction (Chemistry), *Coal, Electric furnaces, Nitrogen, Reaction kinetics, Phase studies, Tests.

Mandai, Hikojiro.
REACTION IN THE CARBONATING TOWER OF AMMONIA-SODA PROCESS, PTS. III-IV. [1963] 13p. (figs. tables omitted) 3 refs.
Order from SLA $1.60 63-14156

Trans. of [Kogyo Kagaku Zasshi] (Japan) 1949, v. 52, p. 267-273.

DESCRIPTORS: Chemical reactions, *Towers (Chemistry), *Carbonates, *Carbamates, Phase studies, *Ammonia, *Ammonium radicals, *Sodium compounds, Chlorides.

(See also 63-14155)

Mandai, Hikojiro.
REACTIONS IN THE CARBONATING TOWER OF THE AMMONIA-SODA PROCESS, PT. I. [1963] 5p. (figs. tables omitted). 3 refs.
Order from SLA $1.10 63-14155

Trans. of [Kogyo Kagaku Zasshi] (Japan) 1949, v. 52, p. 171-173.

DESCRIPTORS: Chemical reactions, *Towers (Chemistry), *Carbonates, *Ammonia, *Ammonium radicals, *Sodium compounds, Chlorides, Chemical indicators.

Mangold, Paul.
PROCESS AND APPARATUS FOR THE MANUFACTURE OF SUPERPHOSPHATE (Verfahren und Vorrichtung zur Herstellung von Superphosphat). [1963] 10p. (foreign text included).
Order from OTS or SLA $1.10 63-14646

Trans. of German patent 268,858, cl. 42, appl. 25 June 49, pub. 16 May 51.

DESCRIPTORS: *Fertilizers, Calcium compounds, Sulfates, *Phosphates, Manufacturing methods, Synthesis (Chemistry), Sulfuric acid, Machines, *Cutting tools, Design.

This invention refers to a process for the manufacture of superphosphate by mixing crude phosphate with sulfuric acid in a mechanical mixing unit and subsequent transfer of the mixture into a vertical chamber, the lower end of which is provided with a discharge mechanism for cutting of the solidified superphosphate cake. The mixture of crude phosphate and acid is retained in the mixing unit so long that the retention in the vertical chamber is just sufficient to give the degree of solidification required for cutting of the superphosphate block at the bottom of the chamber. (Author)

Nikolaevskii, K. M.
PLANNING THE RECOVERY OF VOLTAILE SOLVENTS WITH BATCH-OPERATED ADSORBERS: SELECTED PARTS. 12 Mar 63 [23]p. FTD-TT-62-1848.
Order from OTS or SLA $2.60 63-19574

Unedited rough draft trans. of mono. Proektirovanie Rekuperatsii Letuchikh Rastvoritelei s Adsorberami Periodicheskogo Deistviya, Moscow, 1961, p. 13-18 228-234.

DESCRIPTORS: *Solvents, Mixtures, *Gasoline, *Benzine, *Turpentine, *Naphtha, *Acetones, Alcohols, Specifications, *Adsorbents, *Activated carbon, Test methods, Packaging, Storage, Transportation.

Contents:
Mixed solvents
Appendix 2: Some technical and commercial synonyms for the chemical names of solvents
Appendix 3: Technical specifications for benzines BR-1, BR-2, and extraction
Appendix 4: Technical specifications of benzine B-70 and white spirit
Appendix 5: Technical specifications for recovery carbon AR.

Ohara, Seisaku, Takeda, Katsuharu and others.
METHOD OF ACETYLENE RECOVERY. July 63, 8p.
Order from SA $16.00 SA Code-P-103

Trans. of [published] Japanese patent 4851/1962, cl. 16-B-122 (16-B-120.21) (16-B-511.2), appl. no. 16104/1959, 18 May 59, pub. 16 June 62, by Dai Nihon Celluloid Inc.

DESCRIPTORS: *Waste gases, *Acetylenes, Absorption, Absorbents, *Aldehydes, Acetylaldehydes Towers (Chemistry).

Ordonneau, Jacques.
CONTRIBUTION TO THE STUDY OF THE HYGROSCOPICITY OF SALTS: THE CASE OF POTASSIUM CHLORIDE. [1963] [65]p. 15 refs.
Order from SLA $6.60 63-14594

Trans. of Annales des Mines (France) 1950, v. 139, no. 1, p. 35-63.

DESCRIPTORS: *Potassium compounds, *Chlorides, *Fertilizers, *Absorption (Physical), *Water vapor, Humidity, Vapor pressure, Crystal structure, Surface properties, Temperature, Protective treatments, Salts

Ott, Adolf.
REGARDING THE REFINING OF RAW PETROLEUM. 12 Mar 28, 5p.
Order from SLA $1.10 63-10428

Trans. of Polytechnisches Zentralblatt (Germany) 1875 [ser. 3, v. 29, p. 49-53].

DESCRIPTORS: *Petroleum, *Distillation, Sulfuric acid, Sodium compounds, Hydroxides, Gasoline, Benzenes, Naphtha, Illumination

Rimarski, W. and Konschak, M.
EXPERIMENTAL EXAMINATIONS ON THE QUESTION OF PRESSURE IN HIGH-PRESSURE ACETYLENE PLANTS. [1962] [8]p. (tables figs. omitted) 13 refs.
Order from SLA $1.10 62-20213

Trans. of Autogene Metallbearbeitung (Germany) 1934, v. 27, no. 13, p. 209-215 and 225-232.

DESCRIPTORS: Pressure, *High pressure research, Acetylenes, *Explosions, *Inhibition, Industrial plants, Safety.

Ritter, F.
THE PRODUCTION OF PHOSPHORUS AND PHOSPHORIC ACID IN PIESTERITZ. [1963] 17p. (figs. tables omitted) 2 refs.
Order from SLA $1.60 63-16227

Trans. of Chemie-Ingenieur-Technik (West Germany) 1950, v. 22, no. 12, p. 253-258.

DESCRIPTORS: Production, *Phosphorus, *Phosphoric acids, Chemical industry, Sulfuric acid, Electric furnaces, Chemical engineering.

In Piesteritz there was built a phosphoric-acid installation operating according to the two-stage method. The errected phosphorus furnace house and the phosphoric-acid installation are described; material- and heat-balances of the phosphorus factory, which were completely dismantled by the Russian occupation power in 1954 are presented. (Author)

Salsas-Serra, Francisco.
NEW EQUIPMENT FOR THE INTENSIVE MANUFACTURE OF SULFURIC ACID [Die Neuen Apparaturen zur Intensiven Fabrikation von Schwefels"ure]. Condensation of a lecture [presented] at the European Meeting for Chemical Technique (no. 1) on the occasion of ACHEMA X, Frankfurt a.M., 18-25 May 52. [1963] 13p. (figs. omitted).
Order from SLA $1.60 63-14620

Trans. of Werkstoffe und Korrosion (West Germany) 1952 [v. 3, no. 9/10] p. 329-333.

DESCRIPTORS: *Sulfuric acid, Industrial production, *Condensers (Liquefiers), Absorption, Towers (Chemistry), *Corrosion inhibition, Stainless steel.

Samsonov, G. V., Koval'chenko, M. G., and Sleptsov, V. M.
METHOD OF OBTAINING BORON NITRIDE. 23 Apr 63 [4]p. FTD-TT-63-65.
Order from OTS or SLA $1.10 63-19679

Unedited rough draft trans. of Russian patent 129,647, appl. 641,773/23, 19 Oct 59.

DESCRIPTORS: *Boron compounds, *Nitrides, Production, Boric acid, Carbon, Nitration.

The invention involves a method of obtaining boron nitride by nitration of a mixture of boric anhydride and carbon at high temperatures, distinguished by the fact, that for the purpose of increasing the degree of purity and the yield of final product, the basic mixture, consisting of 85% (by weight) of boric acid and 15% (by weight) of carbon, after dehydration is subjected to two-stage nitration at temperatures of 1500 and 1700° respectively. (Author)

Schytil, Franz and Krollmann, Hubert.
METHOD OF SEPARATION OF FOG DROPS FROM GASES AND VAPORS. [1963] 6p.
Order from OTS or SLA $1.10 63-14617

Trans. of German patent 854,497, cl. 12 e, gr. 301 M 5971 IVb/12s, issued 4 Nov 52, by Metallgesellschaft Co., pat. effective 14 Sep 50, appl. 28 Feb 52, announced 4 Sep 52.

DESCRIPTORS: Separation, *Fog, *Gases, *Vapors, Drops, *Filters (Fluid), Ceramic materials, Gas filters.

Suzuki, Akira; Miyazaki, Osamu and others.
ON LENGTHY MANUFACTURING TEST ON PHOSPHATIC FERTILIZERS BY COAL GAS KILN TYPE FURNACE. REPT. 1. MANUFACTURING PHOSPHATIC FERTILIZERS BY THIS FURNACE. [1963] 9p. (figs. tables omitted) 4 refs.
Order from SLA $1.10 63-16224

Trans. of Kogy Kagaku Zasshi (Japan) 1954, v. 57, no. 4, p. 261-264.

DESCRIPTORS: *Phosphates, *Fertilizers, Furnaces, Coal, Manufacturing methods, Chemical engineering.

Vilesov, H.
FOR HIGH RATES OF DEVELOPMENT OF THE CHEMICAL INDUSTRY OF THE UKRAINIAN SSR. USSR Industrial Development Soviet Chemical Industry no. 75. 4 June 63, 15p. JPRS: 19536.
Order from OTS $0.50 63-21973

Trans. of Ekonomika Radyans'koi Ukrainy (USSR) 1963, no. 2, p. 10-14.

DESCRIPTORS: *Industrial production, *Chemical engineering, *Chemical industry, Economics.

Wäser, Bruno.
ADVANCES OF THE INORGANIC-CHEMICAL LARGE-INDUSTRY. 9. PHOSPHORUS, PHOSPHORIC ACID, SUPERPHOSPHATE, CALCINED PHOSPHATE AND THE LIKE. [1963] 33p. refs.
Order from SLA $3.60 63-16228

Trans. of [Chemische Technik] (Germany) 1940, v. 13, no. 19, p. 344-349.

DESCRIPTORS: *Phosphates, *Phosphorus, Phosphoric acids, Fertilizers, *Economic geology, Chemical industry, Chemical engineering.

Electrical and Electronic Engineering

AUTOMATION EXPRESS, 1963, VOL. 5, NO. 5. 1963, 40p.
Order from International Physical Index, Inc., 1909 Park Ave., New York, 35, N. Y. $57.50

New comprehensive digest of current Russian literature dealing with automation topics.

DESCRIPTORS: *Automation, Periodicals, *Control systems, Data processing systems, *Guidance, Gyroscopes, Telemeter systems, Networks, *Cybernetics, *Information theory, Noise, Servomechanisms.

PASSIVE ELECTRONIC INTERCEPT TECHNIQUES AND DEVICES: REVIEW OF SOVIET LITERATURE JAN-MAR 58. Rept. 1 on AID Work Assignment 45. 16 May 63 [53]p. AID rept. P-63-62.
Order from OTS or SLA $5.60 63-19695

DESCRIPTORS: *Electronic equipment, *Interception, Reflex klystrons, Detection, Direction finding, Antennas, Atmosphere, Propagation, Communication systems, Radio communication systems, Reviews.

Contents:
Receiving equipment
Receive detection techniques
Direction-finding techniques
Antennas
Atmospheric propagation
Data transmission and recording.

Atsarkin, V. A., Zhabotinskii, M. E., and Frantsesson, A. V.
ATTAINING RADIOSPECTROSCOPE LIMIT SENSITIVITY FOR OBSERVATION OF ELECTRON PARAMAGNETIC RESONANCE (O Dostizhenii Predel'noi Chuvstvitel'nosti Radiospektroskopa dlya Nablyudeniya Elektronnogo Paramagnitnogo Rezonansa) tr. by Marcel I. Weinreich. 21 Nov 62 [16]p. 10 refs.
Order from OTS or SLA $1.60 SCL-T-449

Trans. of #Radiotekhnika i Elektronika (USSR) 1962 [v. 7] no. 5, p. 866-873.

DESCRIPTORS: Electrons, *Paramagnetic resonance, *Radio equipment, Radiofrequency spectroscopy.

This article examined the basic sources of noises which restrict the sensitivity of a paramagnetic radiospectroscope. We carried out a comparison of radiospectroscopes of different systems and found that the maximum sensitivity is assured by a superheterodyne circuit with a double modulation of the magnetic field and with a system of an automatic installation of the generator frequency in the operating resonator. The latter system has been thoroughly analyzed. It has been shown that, with a correct projection, it assures a suppression of noises caused by the instability of the frequency oscillations in the signal generator. We also presented the circuit of an operating superheterodyne radiospectrograph; its sensitivity amounts to $2 \cdot 10^{-12}$ g-mol of DPH (diphenylpicrylhydrazyl) in the presence of an effective band of frequencies passed through the receiver and amounting to 2 cycles. (Author)

Berezhnoi, E. F.
A DEVICE FOR THE DETERMINATION OF CORE FREQUENCY PROPERTIES IN THE RE-MAGNETISATION PROCESS ALONG HYSTERESIS SYMMETRIC CYCLES CLOSE TO A LIMITING HYSTERESIS LOOP. 6 May 63 [20]p. 2 refs. FTD-TT-62-1870.
Order from OTS or SLA $1.60 63-19638

Unedited rough draft trans. of mono. Pribor dlya Opredeleniya Chastotkhykh Svoistv Serdechnikov pri Peremagnichivanii po Simmetrichnym Tsiklam Gisterezisa, Vlizkim k Predel'nym, Moscow, 1961, 16p.

DESCRIPTORS: *Magnetic cores, *Magnetic properties, Hysteresis, Temperature, *Frequency, Frequency analyzers, Switching circuits.

Boltyanskii, V. G., Gamkrelidze, R. V. and others.
THE MAXIMUM PRINCIPLE IN THE THEORY OF OPTIMAL CONTROL PROCESSES (WITH DISCUSSION) (Printsip Maksimuma v Teorii Optimal'nykh Protsessov Upravleniya). 18 Mar 63 [25]p. 18 refs. FTD-TT-62-1746; AD-299 854.
Order from OTS or SLA $2.60 63-19431

Unedited rough draft trans. of mono. [Teoriya Diskretnykh Optimal'nykh i Samonastraivayushikhsya Sistem] Moscow, 1961, p. 457-470 (Trudy IFAK (?) Congress (no. 1) v. 2).

DESCRIPTORS: *Mathematical analysis, Mathematical logic, Functions, *Control systems.

A statement of the general optimal problem is presented and the basic results obtained by previous authors is formulated. (Author)

Brebec, Gilbert, Levy, Viviane and others.
NEW METHOD FOR INTRODUCING RARE GASES INTO METALS (Nouvelle Methode d'Introduction des Gaz Rares dans les Métaux). [1962] [7]p. (foreign text included) 1 ref.
Order from SLA $1.10 62-18812

Trans. of Academie des Sciences [Paris]. Comptes Rendus (France) 1962, v. 254, p. 1794-1796 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Metals, *Helium groups gases, Electric discharges, Cathodes (Electron tubes), Discharge tubes, *Electrodeposition.

Dadunashvili, A. S.
A METHOD OF THERMOMAGNETIC PULSE MODULATION AND A DEVICE FOR ITS REALIZATION. 4 Feb 63 [6]p. FTD-TT-62-1805; AD-299 636.
Order from OTS or SLA $1.10 63-19179

Unedited rough draft trans. of Rusian patent 130071 (629645/26) 1 June 59, 1p.

DESCRIPTORS: *Pulse modulation, Temperature, Magnetic cores, Magnetic properties, Transducers, Modulators, *Pulse generators, *Magnetic modulators.

The invention involves a method of thermomagnetic pulse modulation based on the variation of magnetic properties of a composite core consisting of a bar with constant permeability, carrying the primary winding, and a bar with a permeability which varies with heating up to the Curie point, carrying the output windings, differing in that, for the purpose of increasing the efficiency and reliability of the device, the bar with the output windings is periodically heated by loss currents induced in it by the primary winding. In order to modulate the high-frequency currents, a core made of ferromagnetic semiconductors, on which a short-circuited coil or a sleeve is located, is used in the device, in order to heat the core. In order to obtain continuous alternating pulses in two different circuits, the composite core contains a third bar made of material similar to the core with the primary winding, with two windings on it, one of which is intended for the excitation of pulses corresponding to the intervals of the first output winding, while the second is coupled through a rectifier to the first output winding for the purpose of saturating the third bar. (Author)

Dufour, Ch.
ELECTROSTATIC MEMORY TUBES AND THEIR APPLICATIONS. [1963] [26]p. (figs. tables omitted) 11 refs.
Order from SLA $2.60 63-16059

Trans. of unidentified French? article, n.p., n.d.

DESCRIPTORS: *Electrostatics, *Storage tubes, *Image tubes, Design, Operation, Electron tubes.

The author first shows the place occupied by the various electrostatic memory tubes in the general classification of image tubes. The article then comprises a first general section restating the principles of an electrostatic memory, together with the fundamental processes regarding the deposition of electric charges on an insulator by means of a fine electron beam. In the second section, the various types of memory tubes already developed are passed in review as well as their main applications: Barrier Grid Storage Tube and Transmission Grid-Control Tube (Hergenrother); Induced conductivity tube for Radar PPI-Television transformation; Picture Retention Receiver Tubes. (Author)

Firkowicz, S.
ELECTRONICS MAXIMAL PERMITTED CURRENT LOAD OF OXIDE-CATHODES. [1963] 6p. 3 refs.
Order from SLA $1.10 63-14448

Trans. of Polska Akademia Nauk. Bull[etin]: Serie des Sciences Technique, 1960, v. 8, no. 11/12, p. 655-660.

DESCRIPTORS: *Oxide cathodes, *Cathodes (Electron tubes), *Potential theory, Temperature, Distribution, Equations, Electronics, Electric currents, Load distribution.

Maximal permissible load of the cathode increases as specific gravity of the oxide layer becomes larger (porosity decreases). Specific resistance ($\bar{e}$) decreases. As permissible load increases, i.e. at increased temperatures and improved activity of the cathode, permissible load decreases when interface becomes wider. Maximal permissible load is determined by the product $i\sqrt{T}$ in any given cathode. (Author)

Görlich, P., Krohs, A. and others.
SERIALLY PRODUCED IMAGE TUBES AND POSSIBILITY OF DEFINING THEIR BEAM AMPLIFICATION EFFECT. [1963] [18]p. 9 refs.
Order from SLA $1.60 63-14683

Trans. of Zeitschrift für Angewandte Physik (West Germany) 1957, v. 9, no. 11, p. 561-566.

DESCRIPTORS: *Image tubes, Beams (Electromagnetic), Amplifiers, Microscopy, Effectiveness, Image intensifiers (Electronics), Optical equipment components.

Image tubes of types BW 55, BW 55S and BW 30QS developed for series production are discussed. In order to define the image tubes as to their efficiency, a definition is given of an image tube constant, the amplification factor. The use of image tubes in microscopy and voltage optics is described. (Author)

Gurov, V. S., Etrukhin, N. N., and Rabinovich, M.B.
VOICE-FREQUENCY TELEGRAPHY SYSTEMS. 6 June 63, 214p. 19 refs. JPRS: 19591.
Order from OTS $3.50 63-31001

Trans. of mono. Sistemy Tonal'nogo Telegrafirovaniya, Moscow, 1962, p. 3-206.

DESCRIPTORS: *Voice communication systems, *Telegraph systems, *Multiplex, Circuits, *Telegraph equipment, Design, *Transistors, Frequency modulation.

Contents:
Foreward
Status and trends in the development of foreign voice-frequency telegraphy
Circuit features of voice-frequency telegraph equipment units built by foreign firms
Specific design features of foreign voice-frequency telegraphy systems
TT systems with transistors of the MBLE Co. (Belgium)
Voice-frequency telegraphy systems on transistors from the Siemens-Halske Company (FRG)
TT equipment with frequency modulation with transistors of WT-FM24-120Tsa type built by Telefunken (West Germany)
TT equipment with frequency modulation transistors of the TG-24 type built by Telettra (Italy)
Type 60 transistorized 20-channel TT-FM system by Western Union (US)
Type 23A transistorized TT-FM system by Lenkurt (US)
Transistorized TT-PM system by Collins (US)
Appendix; brief summary of foreign models of carrier telegraphy equipment.

Lukacs, Joszef.
SEMICONDUCTORS FOR THERMO-ELECTRIC GENERATORS. [1963] 21p. 10 refs.
Order from SLA $2.60 63-14461

Trans. of Elektrotechnika (Hungary) 1957, v. 50, no. 4, p. 121-130.

DESCRIPTORS: *Thermoelectric generators, *Semiconductors, Resistance (Electrical), Thermal conductivity, Alternating currents, Electrical engineering Thermoelectricity.

The first part of this paper is concerned with descriptions and discussions of thermo-electric generators, their applications to industry, and efficiency of metals and other materials. Special consideration is given to electrical resistance, thermal conductivity, and that thermal electromotor force which determines efficiency. The second part of this paper is concerned with discussions of the Nernst-Ettingshausen Effect and its application to construction of an alternating current thermoelectric generator. The Appendix is concerned with certain theoretical aspects of semiconductors. (Author)

Lutz, H.
DESIGN AND CONSTRUCTION OF 400 KV TRANSFORMERS. 19 Jan 62 [23]p. (foreign text included) 13 refs.
Order from SLA $2.60 63-14931

Trans. of Schweizerischer Elektrotechnischer Verein. Bulletin, 1961, v. 52, no. 23, p. 915-923.
Another trans. is available from SLA $1.60 as 62-10966, 19 Jan 62, 14p.

DESCRIPTORS: Electrical equipment, *Transformers, Electric insulation, Electrical properties, Mechanical properties, Installation.

For abstract see Technical Translations 8: 1234, 1962.

Menges, Karl.
ARRANGEMENT FOR DIRECTIONAL TRANSMISSION OR RECEPTION OF WAVE ENERGY, tr. by J. R.-P. 24 Jan 63, 17p. (figs. omitted).
Order from OTS or SLA $1.60 63-15449

Trans. of German patent 907,753, cl. 74d, gr. 6/12, by Atlas-Werke Aktiengesellschaft, pat. from 13 Feb 40, appl. announced 18 June 53, grant announced 18 Feb 54, pub. 29 Mar 54.

DESCRIPTORS: *Wave transmission, Radio reception, Direction finding, Oscillators, Antenna lobes, *Transmitter-receivers, Design, *Sound, *Magnetostrictive elements

Moldaver, T. I.
SELENIUM RECTIFIERS (O Selenovykh Vypryamitelyakh). [1963] [25]p. (foreign text included) 14 refs.
Order from OTS or SLA $2.60 63-14422

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Fizicheskaya, 1941 [v. 5] no. 4/5, p. 457-466.

DESCRIPTORS: *Dry disk rectifiers, *Rectifiers, *Selenium, Vapors, Condensation, Electrodes, Vacuum apparatus, Cadmium, Manufacturing methods.

A method is described for the mass preparation of washers (Rectifier Discs) for solid selenium rectifiers, this method being based on the condensation of selenium vapours in vacuum. The results of using Fe, Ni, Al, Cd, Cu and Zn as a material for preparation of contact electrodes are reported. It is shown that the large resistance in the easy flow direction, which arises if cadmium is made use of for the preparation of contact electrode, is due to formation of a non-conducting layer. The washers of the rectifiers with inverse unipolarity are described (here the easy flow direction is that from the selenium to the contact electrode). Data are given which characterize the influence of Cd, Pb, Sn, Au, alloy of 1/3 Sn-2/3 Pb and Wood-alloy on the quality of washers. The importance of Cd for securing thermal stability is particularly emphasized. Results of experiments are reported, the purpose of which was to check Meyer's hypothesis concerning the origin of the non-conducting layers in selenium rectifier. These results contradict Meyer's hypothesis. It is stated that there is no connection between the unidirectional conductivity and the rectifier photoeffect on the selenium surface in the rectifier washers. Data are cited concerning the operation in practice of some of batteries prepared according to the method described. (Author)

Neaga, V. Gh. and Antonescu, V. I.
A NEW METHOD FOR THE MEASUREMENT OF VACCUUM, THE ELECTROACOUSTIC VACUUM GAGE. [1960] 5p.
Order from ATS $8.40 ATS-81M38RU

Trans. of Iasi U. Analele Stiint[ifice]. Sect[iunea] I: [Matematica, Fizica, Chimie] (Rumania) 1957, v. 3, no. 1/2, p. 281-286.

DESCRIPTORS: *Vacuum apparatus, Pressure gages, *Measuring devices (Electrical and electronic) *Acoustic equipment

Office of Technical Services, Dept. of Commerce, Washington, D. C.
MAGNETIC RECORDING SYSTEMS. Mar 63, 14p. 190 refs. OTS Selective Bibliography SB-471, Revised.
Order from OTS $0.10 OTS SB-471, Revised

DESCRIPTORS: *Bibliographies, *Magnetic recording systems, Information retrieval, *Magnetic tape, Computer storage devices, Recording systems.

Lists 190 references to domestic and foreign research added to the OTS collection during the period 1958 to April 1963. Covers reports on information sorting with magnetic tape devices, drop outs in magnetic tape systems, long wear magnetic tape, multiple tape queing systems, paper tape to magnetic tape converters among other subjects. (Author)

Ostrovskii, M. A. and Flodina, T. L.
LIGHTS WITH SODIUM LAMPS. 1961 [5]p. 4 refs
AERDL T-1657; AD-290 556.
Order from OTS or SLA $1.10 63-13403

Trans. of [Russian] article from an unidentified source, n.d.

DESCRIPTORS: *Lighting equipment, *Sodium *Illumination, Brightness, Design, Roads

The SKN-140 highway light, which utilizes a sodium lamp, is described. Tests were made to determine the distribution of brightness and illumination of the light.

Pivier, M.
DIFFERENTIAL AMPLIFIERS (BALANCED AMPLIFIERS). [1962] 4p. (figs. omitted)
Order from SLA $1.10 63-10324

Trans. of Electronique et Automatisme (France) 1962, June, p. 270 and 272.

DESCRIPTORS: *Amplifiers, *Transistors, Electric currents, Circuits, Electric potential.

Romanov, V. V.
IMPROVEMENT OF CERTAIN OPERATIONAL CHARACTERISTICS OF SILVER-ZINC ACCUMULATORS. [1962] [5]p. [DSIR] NLL M.8999.
Order from OTS or SLA $1.10 63-15219

Trans. of Vestnik Elektropromyshlennosti (USSR) 1960 [v. 31] no. 9, p. 26-29.
An unedited rough draft trans. is available from OTS or SLA $1.10 as 62-25724, FTD-TT-61-272, 7 June 62 [10]p.

DESCRIPTORS: *Storage batteries, *Silver, *Zinc, Electrodes, Operation, Electric potential, Direct current, Alternating current, Electrical equipment.

For abstract see Technical Translations 8: 1236, 1962.

Ronde, U. L.
TRANSISTORS AS PARAMETRIC DIODES. [1962] 9p. 11 refs.
Order from SLA $1.10 63-10850

Trans. of Funkschau [mit Fernseh-Technik, Schallplatte und Tonband] (West Germany) 1962 [v. 34] no. 9, p. 222-224.

DESCRIPTORS: *Transistors, *Diodes, Ultrahigh frequency, Very high frequency, *Tuning devices, Circuits, *Electronic equipment.

This paper describes the application of transistors for VHF and UHF tuners. By appropriate utilization of properties of the HF transistors it was possible to acnieve the input circuit, as well as the mixing stage for frequencies up to 3,000 MHz. Amplification and noise properties were much better as compared to tube amplification. (Author)

Schaffernicht, W.
IMAGE CONVERTER DEVELOPMENTS. [1963] 3p
Order from OTS or SLA $1.10 63-14701

Trans. of mono. FIAT Review of German Science 1939-46, Electronics, including Fundamental Emission Phenomena, pt. I, 1948, p. 96-99 (PB-85017)

DESCRIPTORS: *Electron optics, Electron tubes, *Image converter tubes, Image intensifiers (Electronics), Design, Electrical properties, Resolution.

Solyanik, D. V.
AN AUTOMATIC HOIST CABLE MONITORING INSTRUMENT (Pribor dlya Avtomaticheskogo Kontrolya Pod"emnykh Kanatov). Sep 62 [17]p. 3 refs. RTS-2100.
Order from OTS or SLA $1.60 62-32950

Trans. of Nauchno-Issledovatel'skii Institut po Bezopasnosti Rabot v Gornoi Promyshlennosti. Trudy (USSR) 1961, v. 12, p. 324-338.

DESCRIPTORS: *Measuring devices (Electrical and Electronic), *Cables (Mechanical), Inductance, Hoists, Mechanical properties.

The instrument for automatic monitoring of hoist cables has a number of advantages, the chief of which are: (1) a comparatively simple electric circuit which includes no electronic valves and which gives stable readings over a long period; (2) in view of the fact that there are two types of instrument transformer and that the measuring circuit is phase sensitive the interpretation of the recording on the paper strip is considerably facilitated and the instrument finds wider use. (Author)

Veverka, Antonin.
CONTRIBUTION TO THE METHOD OF MEASURING IONIZATION IN TRANSFORMERS (Prispevek k Metodice Mereni Ionizace v Transformatorech). [1963] [20]p. (foreign text included) 4 refs.
Order from SLA $1.60 63-14928

Trans. of Elektrotechnicky Obzor (Czechoslovakia) 1961, v. 50, no. 4, p. 192-196.

DESCRIPTORS: Transformers, *Electric insulation, *Ionization, Electric bridges, Electric discharges, Power, Measurement.

It is shown how an appropriate adaptation of a high-voltage bridge permits separating in the diagonal of the balanced bridge the current pulses and the subsequent oscillations from the total current flowing into the object, even if the voltage of the source is not purely sinusoidal. These values, together with the voltage on the object, can be used for measuring the power consumed during discharges in the insulation. (Author)

Zakachurin, V. D., Lebed', B. M., and Shannikova, N. A.
SLOTTED WAVEGUIDE BRIDGE (Shchelevoi Volnovodnyi Most) tr. by H. H. 15 May 63; 2p. I-2596.
Order from OTS $0.50 63-11643

Trans. of Soviet patent 147240, cl. 21a, 48_{68}, announced 19 Sep 61 as 745167/26-9, pub. 17 May 62 (pub. in Byulleten' Izobretenii (USSR) 1962, no. 10).

DESCRIPTORS: *Waveguides, Waveguide slots, Electric bridges, Design, Electronics.

The slotted waveguide bridge on square section waveguide with non-rectangular shaped slot and with inductive tuning rods is characterized by the fact that in order to increase the bandwidth characteristics the inductive tuning rods are disposed obliquely. (Author)

Mechanical Engineering

Göttingen, Betz.
DIAGRAMS FOR THE CALCULATION OF A SERIES OF BLADES. [1963] [23]p. 5 refs.
Order from SLA $2.60 63-14482

Trans. of Ingenieur-Archiv (Germany) 1931, v. 2, p. 359-371.

DESCRIPTORS: *Turbine blades, *Vortices, *Fluid flow, Turbulence, Velocity, Conformal mapping; *Mechanical engineering, Design, Numerical analysis.

The field of a vortex series in which one vortex is omitted is represented in the form of curves. Futher, an example of the application of these curves is given for the determination of blade series, where different methods are used, depending on the condition and the degree of accuracy required. (Author)

Man'kina, N. N., Tkachenko, A. G., and Buinovskaya, L. G.
A METHOD OF ELUCIDATING THE PROCESS OF FORMATION OF IRON OXIDE DEPOSITS ON THE INNER HEATING SURFACES OF HIGH PRESSURE BOILERS. [1962] 8p. (tables omitted) 1 ref.
Order from OTS or SLA $1.10 63-15153

Trans. of Teploenergetika (USSR) 1960 [v. 7] no. 9, p. 30-34.

DESCRIPTORS: *Boilers, *Iron compounds, Oxides, Deposits, Heating, Surfaces, *Scale.

An account of a method of performing balancing investigations of boilers with natural circulation with the purpose of determining the course of the processes of iron oxide scale formation on the inner heating surfaces. (Author)

Ordnance, Missiles, and Satellite Vehicles

REMARKS CONCERNING THE USE OF THE MACH-ZEHNDER INTERFERENCE REFRACTOMETER AS WELL AS THE SCHLIEREN METHODS OF DVORAK AND TOEPLER; CONCERNING THE PRODUCTION OF THE ELECTRIC SPARKS USED IN BALLISTICS AND THEIR CHARACTERISTICS (TRIGGERING METHODS); CONCERNING CINEMATOGRAPHY IN GENERAL AND SPARK CINEMATOGRAPHY IN PARTICULAR. [1963] [23]p. 7 refs.
Order from SLA $2.60 63-14907

Trans. from mono. Experimentelle Ballistik, n. p., 1927, v. 3, suppl., chap. 27-29.

DESCRIPTORS: *Ballistics, Interference, *Refractometers, Shock waves, *Schlieren photography, Electric discharges, *Sparks, *High speed photography, Motion picture photography, Spark shadowgraph photography, Photography.

YUGOSLAVIAN PLANS TO FIRE JAPANESE KAPPI-VI ROCKET. 9 Feb 61 [2]p. AF-1 461 068.
Order from OTS or SLA $1.10 62-25710

Trans. from Japan Times, 1961, 6 Feb.

DESCRIPTORS: *Sounding rockets, Launching, *Upper atmosphere, Yugoslavia, Japan.

Andreev, K. K.
ABOUT THE MAIN CAUSES OF THE DIFFERENCE BETWEEN INITATING AND SECONDARY EXPLOSIVE SUBSTANCES. 9 May 63 [6]p. 3 refs. FTD-TT-63-325.
Order from OTS or SLA $1.10 63-19651

Unedited rough draft trans. of Akademiya Nauk SSSR. Doklady, 1962, v. 146, no. 2, p. 413-414.

DESCRIPTORS: *Explosive materials, *Aluminized explosives, *Detonation, *Combustion, Explosion gases, Fulminates, RDX, Nitrates, Ammonium compounds, Oxychlorides.

Bergquist, Björn.
TRANSPORT ROCKETS TO EARTH SATELLITES. [1963] 20p. 11 refs.
Order from SLA $1.60 63-14676

Trans. of Teknisk Tidskrift (Sweden) 1957, v. 87, no. 21, p. 491-496.

DESCRIPTORS: *Satellites (Artificial), *Rendezvous spacecraft, Transportation, Spacecraft, Design, Space stations, Rockets.

Borisov, V.
ON THE RETURN OF ARTIFICIAL SATELLITES TO EARTH. 1 Mar 63 [5]p. FTD-TT-63-55; AD-299 663.
Order from OTS or SLA $1.10 63-19507

Unedited rough draft trans. from Sovetskaya Aviatsiya (USSR) 1958, 5 Apr, p. 4.

DESCRIPTORS: *Satellites (Artificial), Re-entry vehicles, *Atmosphere entry.

Cranz, C.
MEASUREMENT OF THE AIR DENSITY AT VARIOUS POINTS IN THE FIELD OF A FLYING BULLET WITH THE AID OF THE MACH INTERFERENCE REFRACTOMETER. [1963] [10]p. (figs omitted).
Order from SLA $1.10 63-14905

Trans. of mono. Lehrbuch der Ballistik, v. 4, 2d ed., n.p., 1936, p. 271-279.

DESCRIPTORS: *Ballistics, *Projectiles, Air, Density, Interference, *Refractometers, Measurement.

Cranz, C. and Glatzel, Br.
THE FLOW OF GAS UNDER HIGH INITIAL PRESSURES, PT. I. [1963] [18]p. 4 refs.
Order from SLA $1.60 63-14904

Trans. of Annalen der Physik (Germany) 1914, v. 43, p. 1186-[1194].

DESCRIPTROS: *Gas flow, Pressure, *High pressure research, *Ballistics.

Khristoforov, B. D.
PARAMETERS OF A SHOCK WAVE AND GAS BUBBLE IN AN UNDERWATER EXPLOSION OF CHARGES OF TEN (PENTAERY-THRITOL TETRANITRATE) AND LEAD AZIDE OF DIFFERENT DENSITY. [1962] [12]p. 5 refs. [DSIR] NLL M 8918.
Order from OTS or SLA $1.60 63-15175

Trans. of Zhurnal Prikladnoi Mekhaniki i Tekhnicheskoi Fiziki (USSR) 1961, no. 4, p. 118-127.

DESCRIPTORS: *Shock (Mechanics), *Shock waves, Gases, Velocity, Lead compounds, Azides, Explosion effects, Measurement, *Underwater explosions, *Explosion bubbles, *Underwater explosives.

Results are given of the measurement of the parameters of a shock wave and a gas bubble under conditions of an underwater explosion of TEN with a density of charge $\rho = 1 \cdot 6 - 0 \cdot 4$ g./cm.^{3} and of lead azide with $\rho = 1 \cdot 6$ and 0·85 g./cm.^{3}. Work was carried out to determine the effect of energy release conditions as a result of the detonation of the explosive material, on the parameters of the explosion. With a lowering of the density of the explosive material, the velocity of the detonation and the initial pressure P_o on the boundary charge-water decrease. With the change over from charges of TEN with a density of $\rho = 1$ 6 g./cm.^{3} to lead azide with $\rho = 0$ 85 g./cm.^{3}, P_o changed from 150,000 to 12,000 atm. Considerable divergences are noticed from the law of energy similitude in the case of the shock wave and gas bubble not only in the zone in the vicinity of the charge but also in the asymtotics zone. (Author)

Muraour, Henri and Aunis, Gabriel.
COMBUSTION LAWS OF COLLOIDAL POWDERS: A SURVEY OF FRENCH RESEARCH BETWEEN WORLD WARS I-II.
Order from SLA $1.60. 63-14508

Trans. of unidentified mono. (report) of the [Laboratoire Central du Service des Poudres, Paris] n. d.

DESCRIPTORS: *Explosive materials, *Colloids, Powders, *Combustion, Reaction kinetics, Temperature, Pressure, Gases, Detonation, *Crusher gages, Calibration, Quenching (Inhibition), Scientific research, *France.

Vinogradov, B. A., Rodionov, V. N., and Shemyakin, E. I.
DISPLACEMENT OF A SPHERICAL VOLUME OF EARTH IN EXPLOSION AT THE CENTRE OF SYMMETRY. [1962] [8]p. 3 refs. [DSIR] NLL M. 8909.
Order from OTS or SLA $1.10 63-15199

Trans. of Zhurnal Prikladnoi Mekhaniki i Tekhnicheskoi Fiziki (USSR) 1961, no. 3, p. 36-42.
Another trans. is available from OTS or SLA $1.60 as UCRL Trans-859 (L), July 62 [13]p.

DESCRIPTORS: *Underground explosions, Explosions, *Explosion effects, *Soils, Compressive properties, Plasticity, Motion, Shaped charges, Charges (Explosives), Spheres, Shock waves, Equations of motion, Velocity.

For abstract see Technical Translations 9:1025, 1963.

Sanitation and Safety Engineering

Belyakov, A. A.
DETERMINATION OF CARBON TETRACHLORIDE IN AIR. [1963] 3p. 7 refs.
Order from OTS or SLA $1.10 63-14127

Trans. of Zavod[skaya] Lab[oratoriya] (USSR) 1957, v. 23, no. 2, p. 161-162.

DESCRIPTORS: *Atmospheric pollution, *Gas analysis, *Carbon tetrachloride, *Chloroform, Determination, Colorimetry, Adsorbants, Reagents, Acetones, Pyridines.

Heinz, H. J. and Fischer, W. K.
DETERGENTS IN WATER AND WASTE WATER. [1963] [45]p. 176 refs.
Order from SLA $4.60 63-14401

Trans. of Fette Seifen Anstrichmittel (West Germany) 1962, v. 64, no. 3, p. 270-279.

DESCRIPTORS: *Cleaning compounds, *Water, *Wastes (Sanitary engineering), Chemical properties, Physical properties, Disposal, *Surface-active substances, Toxicity, Animals, Man, *Sanitary engineering, Bibliographies.

Publications on the problem of detergents in water and waste water, have been summarized into seventeen sections grouped according to subject. References to the new literature utilized (up to about May, 1961) offer the reader the opportunity to obtain further specific information.

Pyankov, V. A.
OXIDATION AND VAPORIZATION OF MERCURY AND SORPTIONS OF MERCURY VAPORS. [1963] 8p.
Order from OTS or SLA $1.10 63-14100

Trans. of Novosti Med[itsiny] (USSR) 1952, v. 26, p. 68-72.

DESCRIPTORS: *Wastes (Industrial), Purification, *Mercury, Toxicity, Contamination, Oxidation, Vapors, Sorption, Vaporization, Velocity, *Atmospheric pollution, *Clothing, Decontamination, Protective coverings, Thin films, Oxides, Transition elements, Ozone, Hydrogen compounds, Sulfides, Calcium compounds, Chlorides.

FOOD, HANDLING, AND PACKAGING EQUIPMENT

PROCEDURI FOR THE IMPROVEMENT OF SOUPS AND SUCH. [1963] 3p.
Order from OTS or SLA $1.10 63-14362

Trans. of Dutch patent 33,866, cl. 53 k.1., by Hanseatische Mühlenwerke, Inc., Hamburg, appl. 62,940, presented 26 Oct 32, pub. 15 May 34 (precedence from 10 Nov 31, Germany).

DESCRIPTORS: *Food, *Taste, Plants (Botany), *Phospholipids, Preparation.

A procedure is given for the improvement of soups, sauces and such, in the sense that to the soups, respectively soupcubes, etc., are added fosfatides of vegetable or animal origin. (Author)

Emmerich, A.
BLOWING AIR THROUGH CRYSTAL SUGAR LAYERS. 28 Nov 58, 6p. (figs. omitted).
Order from SLA $1.60 63-14860

Trans. of Zucker (West Germany) 1954, v. 7, p. 309-311.

DESCRIPTORS: *Carbohydrates, Storage, *Silos, *Ventilation, *Blowers, Gas flow, Crystals, Powders.

Freudenberg, Karl; Lautsch, Willy, and Engler, Kurt.
FORMATION OF VANILLIN FROM PINE LIGNIN. [1963] 11p. (refs. omitted).
Order from SLA $1.60 63-14198

Trans. of [Chemische] Ber[ichte] (Germany) 1940, v. 73, p. 167-171.

DESCRIPTORS: *Benzaldehydes, Alkoxy radicals, Hydroxides, Synthesis (Chemistry), *Lignin, Wood, *Sulfate pulp, Oxidation, Methyl radicals, Esters, Carbonic acids.

Garino, Mario.
ION EXCHANGE APPLIED TO THE PURIFICATION OF SUGAR SYRUPS. [1963] 8p.
Order from SLA $1.10 63-14881

Trans. of Industria Saccarifera Italiana, 1948, v. 41, p. 103-105.

DESCRIPTORS: *Carbohydrates, Purification, *Ion exchange.

Genotelle, Jean.
DEIONIZATION OF SUGAR BEET JUICES: INDUSTRIAL EXPERIENCE IN THREE REGIONS: PRESENT POSSIBILITIES. 20 May 62, 20p. (figs. tables omitted).
Order from SLA $1.60 63-14062

Trans. of la Sucrerie Belge, 1960, v. 80, p. 49-65.

DESCRIPTORS: *Ion exchange, Carbohydrates, *Beets, Industrial production, Food, Processing

Goldstein, S.
PROBLEMS OF BREAD FLOUR INVESTIGATION. [1963] 22p. (figs. omitted).
Order from SLA $2.60] 63-14783

Trans. of Chimia (Switzerland) 1957, v. 11, no. 6, p. 141-172.

DESCRIPTORS: *Bread, *Flour, Wheat, Proteins, Fats, Processing, Quality control, Food.

Hoffmann, Hans-Joachim.
DRYING AND COOLING OF SUGAR IN PNEUMATIC CONVEYING TUBES. 28 Nov 58, 19p. (figs. omitted) 9 refs.
Order from SLA $1.60 63-14861

Trans. of Zucker (West Germany) 1953, v. 6, p. 126-133.

DESCRIPTORS: *Dehydration, *Cooling, *Carbohydrates, Pneumatic devices, Conveyors, Manufacturing methods, Food

Kerman, Cron.
THE IMPROVEMENTS OF SUGAR BEETS AND THEIR RELATION TO THE SUGAR INDUSTRY. [1963] 16p. (figs. omitted).
Order from SLA $1.60 63-14547

Trans. of Listy Cukrovar[nicke] (Czechoslovakia) 1941, v. 60, p. 32-37.

DESCRIPTORS: *Carbohydrates, *Beets, Food, Industrial production, Processing

Lemmerzahl, J.
THE DEXTRIN METHOD FOR THE DETERMINATION OF THE PARASITE DAMAGE EXTENT IN WHEAT FLOURS. 27 Jan 61, 9p. 6 refs.
Order from SLA $1.10 63-14877

Trans. of Brot und Gebäck (West Germany) 1955, v. 9, p. 139-141.

DESCRIPTORS: *Flour, Wheat, Manufacturing methods, Processing, *Parasites, Damage, *Test method, Glycoside hydrolases, Food.

Experiments were carried out for the purpose of finding a sample method which allows the determination of the outgrowth degree of cereal flours, without large apparatusses and without manipulations, the results of which is described as a procedure called Dextrin Method. Deviating from all other methods for determination of the outgrowth degree, Dextrin is added upon which the amylases of the flour react. For this purpose one adds to the suspension of the flour to be investigated a certain amount of Dextrin, when preparing the suspension and after a determined minimum standing time, the filtrate is mixed with n/20 potassium iodide and the occurring color tone is determined as "Dextrin Values", by means of a standardized color scale. Since one operates at a temperature of approximately 20° C (room temperature) thermostat and water bath are not required, the method therefore is a very simple one and takes fully into consideration the requirements of the practice of cereal processing plants. The results obtained with this method are explained by means of tables and the method is discussed. (Author)

Mantovani, Giorgio.
THE PROBLEM OF MOISTURE IN THE STORAGE OF REFINED SUGAR AND ITS CONTROL: DESCRIPTION OF AN APPARATUS FOR A RAPID MOISTURE DETERMINATION. [1963] [11]p. 74 refs.
Order from SLA $1.60 63-14857

Trans. of Industria Saccarifera Italiana, 1954, v. 47, p. 108-114.

DESCRIPTORS: *Moisture, *Carbohydrates, Storage, Control, Determination, Preservation, Industrial equipment, Food.

The device utilizes a small oven whose dimensions are 30 x 20 cm., in the back of which is a connection with the vacuum source. A thermometer is placed inside through the top of the oven in such a way that the bulb is located in the zone of the opening mentioned above. From the upper part of the oven, a tube of pyrex glass 25 cm. long with a diameter of 4 cm. containing an electrical resistor of 300 watts and 125 volts penetrates into the interior. The peculiar characteristic of this device consists in bringing about the adjustment of the temperature not by means of relays, as is commonly done, but through the regulation of the length of the tube introduced into the interior of the furnace. Since this carries the heating resistor, with such regulation a variation of temperature in the interior is actuated. In this way, with the heating begun, one can, in a very short time, regulate the internal temperature to the desired value, a value which remains constant within the limits of a normal determination of humidity. (Author)

Manne, Eugène.
CHEMICAL PRODUCT FOR ENHANCING THE FLAVOR OF FOOD PRODUCTS. [1963] 2p.
Order from OTS or SLA $1.10 63-14630

Trans. of Belgian patent 487,688.

DESCRIPTORS: *Food, *Taste, *Condiments, *Amino acids, Wheat, Corn, Vegetables, Industries, Physical properties.

This product is an amino-acid obtained from the by-products of the industries processing wheat, maize (corn), soy beans, and sugar-beets. Having a molecular weight of 169.08, said product has the form of a white crystalline powder slightly saline, highly soluble in H_2O and insoluble in alcohol. Its chemical formula is: HOOC. $CH(NH_2)$. CH_2COONa. (Author)

Mariani, Eugenio.
THE POSSIBILITY OF EMPLOYING ION-EXCHANGE RESINS IN SUGAR REFINING. [1963] 14p. 17 refs.
Order from SLA $1.60 63-14869

Trans. of Industria Saccarifera Italiana, 1948 [v. 41] p. 197-213.

DESCRIPTORS: *Ion exchange resins, *Carbohydrates, Sucrose, *Beets, Refineries, Foods, Processing.

Pagenstedt, Bernd.
TECHNICAL STUDIES OF STARCH WITH THE AID OF THE "VISKOGRAPH" (Stärketechnologische Studien mit dem Viskographen). [1963] [19]p. (foreign text included) 5 refs.
Order from SLA $1.60 63-14970

Trans. of reprint of die Stärke (West Germany) 1951, v. 3, no. 7, p. 202-210.

DESCRIPTORS: *Starches, *Colloids, Gels, Viscosity, Measurement, *Viscosimeters, Fermentation, Borax.

Pacha, Ventre.
COLORIMETRIC PROCESS FOR DETECTING VERY SMALL QUANTITIES OF SUGAR. [1963] [1]p.
Order from SLA $1.10 63-14969

Trans. of [Industries Agricoles et Alimentaires] (France) 1902 [v. 20] p. 1475-1476.

DESCRIPTORS: *Colorimetric analysis, Food, *Carbohydrates, Sucrose, Processing, *Wastes (Industrial), Micro analysis.

A short description is given of the latest, improved Brabender VISCOGRAPH with heating and cooling control, as well as of the testing routine as applied for the preparation of the starch-water-suspensions. The starch formation, in general, and the interpretation of a Viscograph gelatinisation curve are commented upon. In assessing gelatinisation characteristics of different qualities of starch, it was found that the potato starch, at definite concentrations, shows differences in the curves, these differences keeping between 2 maximum swelling points. Hereafter the paste formation capacity or the paste yield respectively, as subject from the concentration of starch, is investigated, the findings being supported by graphs, tabulae and illustrations. Apart from the changes of the various individual factors in the graphs obtained, it is above all the increase of viscosity as reproduced by the Viscograph when increasing the concentration of the various brands of starch, which is decisive for the determination and interpretation of yield curves. Further, the resistance of different brands of starch against fermentative decomposition as well as the influence of additions of borax upon the gelatinisation capacity of different brands of starch is dealt with in detail and explained by curves, tabulae and graphic illustrations. At the end of the treatise explanations are given of a new method, using Viscograph figures to determine the "spreading easiness" or "shortness" respectively of a starch potato paste, and graphs are shown both of maize and potato starch.

Spicher, Gottfried.
THE MICROFLORA OF THE GRAIN IN SCREENROOM AND MILLING DIAGRAM. 1. RESEARCH ABOUT THE EFFECTIVENESS OF STEAM CONDITIONING ON THE GERM CONTENT OF THE WHEAT. [1963] [15]p. 9 refs.
Order from SLA $1.60 63-14975

Trans. of Getreide u[nd] Mehl (West Germany) 1960, v. 10, no. 11, p. 121-128 (Federal Research Institute for Grain Processing, Detmold (West Germany). Publication-2677).

DESCRIPTORS: Microbiology, *Wheat, Bacteria, *Flour, Heat treatment, Processing, Decontamination, *Steam cleaning.

Stanek, V. and Pavlas, P.
A RAPID INFORMATIVE METHOD FOR DETERMINING THE COMPOSITION OF THE DETERIMENTAL NITROGEN OF AMINES AND AMINO ACIDS IN BEETS: PRELIMINARY REPT. [1963] 32p. 14 refs.
Order from SLA $3.60 63-14601

Trans. of Listy Cukrovar[nicke] (Czechoslovakia) 1934, v. 53, p. 113-124.

DESCRIPTORS: Chemical analysis, Nitrogen, *Amines, *Amino acids, *Beets, Carbohydrates, Manufacturing methods, Food, *Colorimetric analysis

MACHINERY, FABRICATION, AND ACCESSORY EQUIPMENT

USSR INDUSTRIAL DEVELOPMENT: SOVIET METALWORKING EQUIPMENT NO. 57. 10 June 63, 33p. JPRS: 19618.
Order from OTS $1.00 63-31015

Trans. of Kuznechno-Shtampovochnoe Proizvodstvo (USSR) 1963 [v. 5] no. 4, p. 40-41; and 14 selected articles from Mar-Apr 63 issues of 7 Russian newspapers.

DESCRIPTORS: *Industrial production, *Industrial equipment, *Machine tools, *Welding, Diffusion, *Vacuum apparatus, Automation, Control systems, *Abrasives, Maintenance, Industrial plants, *Ball bearings, *Drawing (Machine processing), *Wire, Metal joints.

Contents:
New trends in machine-tool building, by V. Slobodenyuk
The new economical welding methods, by I. Karev
Machine-tools and people, by R. Safragan and V. Novak
Amalgamation of two plants into the Riga tool plant
Casting equipment for sale by Moscow plant: Ivanov Boer plant fights for the title of the collective of Communist labor
Machines and lathes for sale
The abrasives plant in Volzhsk
The need for a machine-tool repair plant, by P. Khodorov
Improvement of tool quality
Giant machine tools, by A. Slyarov
New bearing ball finishing machine in Vitebsk
Automatic press for making dinked-and-drawn grid from sheet metal, by Yu. I. Naumov
Designing a new automatic machine for finishing miniature ball bearings
Wires connected by explosion
Machine tools for Cuba.

USSR INDUSTRIAL DEVELOPMENT: SOVIET METALWORKING EQUIPMENT NO. 58. 26 June 63 [22]p. JPRS: 19881.
Order from OTS $0.75 63-31130

Trans. of Nauka i Zhizn' (USSR) 1963 [v. 30] no. 4, p. 32-33; Byulleten' Tekhniko-Ekonomicheskoi Informatsii (USSR) 1963, no. 4, p. 27-39; and 7 selected short articles from 1963 issues of 5 Russian newspapers.

DESCRIPTORS: *Industrial production, *Industrial equipment, *Machine tools, Maintenance, Metalforming, presses, Cutting tools, Automation, Milling machines, Presses (Machinery), Drilling machines, Grinders, Flywheels, *Machining.

Contents:
Overhauling of machinery
Automation of metalworking machines
Copper and tin cut a diamond
Automatic machine tools built in Leningrad
Automatic dinking-drawing presses for sale
Electric metal-finishing machines
Thread-rolling replaces cutting, by A. Alekseev
Chikment automatic press plant delivered faulty equipment, by V. Kizima
Model K-960 of a simple-action single-crank press with a force of 2,500 tons, by I. M. Podrabinnik
LM106 automatic line for machining holes in a flywheel, by D. Ya. Gorfinkel'
Universal and contouring milling machines and machines with program control, by G. A. Monakhov
Small unit-type machines for machining articles with tools of considerable size, by S. M. Zonnenberg
New spline grinders, by N. P. Stepynina

USSR INDUSTRIAL DEVELOPMENT: SOVIET PRECISION EQUIPMENT NO. 79. 18 June 63, 10p. JPRS: 19723.
Order from OTS $0.50 63-31065

Trans. of Novye Tovary (USSR) 1963, no. 4, p. 1-2, 6; Promyshlennaya Energetika (USSR) 1963 [v. 18] no. 5, p. 53.

DESCRIPTORS: *Industrial production, *Precision equipment, *Radio receivers, *Sound reproduction systems, *Television receivers, *Amplifiers, Electrical equipment, Electric relays, Lighting equipment.

Contents:
New "Italmas" radio-phonograph
Improved "Rekord-B" television set, by F. Tormozov
"Kaskad" booster unit for television, by V. Tripol'skii
New consumer goods produced by the Kiev electrical precision equipment plant, by E. Chugunov
New manufactured products; FRB-2 relays and electric incandescent lamps.

Okhremenko, N. M.
OPTIMUM GEOMETRICAL RATIOS IN INDUCTION PUMPS FOR LIQUID METALS. 15 Feb 63 [20]p. 14 refs. FTD-TT-62-1724. AD-401 325.
Order from OTS or SLA $1.60 63-19300

Unedited rough draft trans. of Elektrichestvo (USSR) 1961, no. 9, p. 10-16.

DESCRIPTORS: *Liquid metal pumps, *Inductance, Geometry, Electromagnetic pumps.

Two problems are discussed concerning the selection of optimum geometric ratios in induction pumps: judging by the maximum efficiency conditions and minimum weight of active materials. The solution is applied to a plain pump with bilateral inductor, but the results are also applicable to cylindrical and spiral pumps.

Wurz, Fritz.
GENERATOR WITH ROTARY-ROLL GRATE AND AUTOMATIC SLAG-REMOVAL. [1963] 6p. (figs. tables omitted).
Order from SLA $1.10 63-16226

Trans. of GWF [das Gas- und Wasserfach] (West Germany) 1952, v. 93, no. 9, p. 255-257.

DESCRIPTORS: *Gas-generating systems, *Furnaces, Automatic, Slags, Disposal, Design, Operation.

Engines and Propulsion Systems

CREATIVE THOUGHT. 4 Feb 63 [3]p. FTD-TT-62-1839; AD-299 626.
Order from OTS or SLA $1.10 63-19630

Unedited rough draft trans. from Izvestiya (USSR) 1962, 4 July, p. 5.

DESCRIPTORS: *Internal combustion engines, Design, Pistons, Rotation.

An internal combustion engine with a rotating piston, designed by Warsaw mechanic Jerzy Djumal, has been patented in the Polish People's Republic. In the cylinder of the engine is a piston which resembles a small hammer. This particular characteristic of the design in conjunction with the unique working principle of the intake and exhaust devices assures that the piston will rotate, due to which the engine has increased power with less fuel consumption. (Report quoted in its entirety)

Berman, L. D.
DESIGN DEVELOPMENT OF STEAM TURBINE CONDENSERS, tr. by J. K. Skvirzynski. Feb 62 [24]p. 27 refs. [DSIR NLL] M. 3728.
Order from OTS or SLA $2.60 63-19735

Trans. of Teploenergetika (USSR) 1961, v. 8, no. 9, p. 78-83.

DESCRIPTORS: *Steam turbines, *Turbine parts, *Condensers (Liquefiers), Steam condensers, Design, *Pipes, *Corrosion resistant alloys, Costs, Heat transfer, Pumps, Condensation.

Dovzhik, S. A. and Kolokol'tsev, N. A.
EXPERIMENTAL INVESTIGATIONS OF TWO ONE-STAGE COMPRESSORS IN A WIDE RANGE OF REYNOLDS NUMBERS [AND] CALCULATING TURBINES WITH VARIABLE GAS PARAMETERS ON THE RADIUS. 20 Feb 63 [42]p. 11 refs. FTD-TT-62-1750. AD-299 657.
Order from OTS or SLA $4.60 63-15980

Unedited rough draft trans. of Promyshlennaya Aerodinamika (USSR) 1961 [v. 16] no. 20, p. 57-81.

DESCRIPTORS: *Compressors, *Adiabatic gas flow, Compressor parts, Velocity, Geometric forms, Aerodynamic properties, *Reynolds number, *Turbines, *Gas turbines, Gases, Temperature, Pressure, Graphic analysis, Jets, Turbine blades.

Mezheritskii, A. D.
VENTILATION LOSSES IN A TURBINE STAGE. 7 Feb 63 [15]p. 5 refs. FTD-TT-62-1740. AD-299 640
Order from OTS or SLA $1.60 63-15979

Unedited rough draft trans. of Energomashinostroenie (USSR) 1962 [v. 8] no. 6, p. 29-32.

DESCRIPTORS: *Turbines, *Turbine parts, *Ventilation, Operation.

Experimental data on determining the effect of a number of structural factors on the magnitude of ventiliation losses in a turbine stage are adduced. A new formula for determining ventilation losses which allows for these factors is given. (Author)

Nikolaev, G. A. and Mordvintseva, A. V.
WELDING OF MARTENSITIC STEEL, tr. by B. C. B. [1962] [9]p. 2 refs. C. E. Trans. 2362.
Order from OTS or SLA $1.10 63-15194

Trans. of mono. Obrabotka Zharoprochnykh Splavov [Machining of Fire Resistant Alloys] [Akademiya Nauk SSSR] 1960, p. 131-137.

DESCRIPTORS: *Steel, *Martensite, *Welding, Arc welding, *Stresses, Deformation, Heat treatment, Heat resistant metals and alloys, *Turbine blades.

Experiments were made on the deformation and internal stresses of welded joints as a function of time, pre-heating, annealing, type of electrode, heating during welding, and low-temperature treatment in order to stabilize the dimensions of specimens after welding.

Schmidt, Günther.
GASTURBINES: INVESTIGATIONS OF AXIAL FLOW TURBINES WITH SHOCKLESS LAMINAR FLOW AND UNTWISTED TURBINE BLADES. [1963] 18p.
Order from SLA $1.60 63-14419

Trans. of MTZ; Motortechnische Zeitschrift (West Germany) 1962, v. 23, p. 177-183.

DESCRIPTORS: *Gas turbines, *Axial-flow turbines, *Turbojet engines, *Turbine blades, Design, Fluid flow, Mathematical analysis.

A new vortex distribution for axial flow turbines was described in the theoretical part of this report. It was pointed out that there aren't any losses at the design point due to false flow direction, even by using untwisted turbine blades, because of constant relative flow direction over the whole height of the blades. Tests were carried out in a cold flow rig and the results checked very close with the calculated data. A turbine characteristic net was plotted, which is a valuable base for further turbine design work. (Author)

Ullmann, K.
THE LOSSES ASSOCIATED WITH MIXTURE FORMATION AND COMBUSTION IN THE ENGINE AND CONSIDERATIONS CONCERNING HIGH SPEED OPERATION OF ENGINES. 15 June 48, 3p.
Order from SLA $1.10 63-14273

Abstract trans. of Deutsche Kraftfahrtforschung (Germany) 1939, no. 34.

DESCRIPTORS: *Combustion, *Fuel injection, *Diesel engines, Energy conversion, Heat transfer, Thermodynamics.

Vilenskii, A. F., Vimyguk, A. V. and others.
A DEVICE FOR STARTING GAS TURBINE ENGINES (Ustroistvo dlya Zapuska Gazoturbinnykh Dvigatelei) tr. by H. H. 21 May 63, 6p. I-2590.
Order from OTS $0.50 63-11644

Trans. of Soviet patent 146 136, cl. 26f. 13, announced 6 Jan 61 under 691841/25, pub. 12 May 62.

DESCRIPTORS: *Engine starters, *Gas turbines, Automatic transmissions, Gas turbine rotors, Torque couplings, Design, Operation, Mechanical engineering.

The invention involves a device for starting gas turbine engines, consisting of a starter engine, a torque converter with shaft rotating device and free wheeling, characterized by the fact that in order to simplify its construction and decrease its adjusting power, as well as to reduce its dimensions, use is made within it of an acceleration torque converter the turbine rotor of which is made in the form of an embracing wheel. (Author)

Manufacturing Equipment and Processes

METHOD FOR THE MECHANICAL WRAPPING OF CIGARS WITH A SHARPLY BENT OR TAPERED LIGHTING END, WHOLLY OR PARTIALLY ENCLOSED BY THE WRAPPER, tr. by L. A. N. 7 Dec 62, 8p. (figs. omitted).
Order from OTS or SLA $1.10 63-13742

Trans. of Belgium patent 547,992, by De Vennootschap Onder Firma "Velasques Sigarenfabrieken voorheen Sigarenfabriek St. Antonius", Meerveldhoven (Netherlands), appl. 22 May 56, granted 22 Nov 56, printed and pub. 6 Nov 59 (appl. for pat. filed in Netherlands 25 May 55).

DESCRIPTORS: *Tobacco, Smokes, *Packaging.

Berk, Hendrik Johannes Barthold.
SYNTHETIC BINDER FOR CIGARS, tr. by J. B. 28 Nov 62, 5p. (figs. omitted).
Order from OTS or SLA $1.10 63-15410

Trans. of German patent 742,561, cl. 79b, gr. 25, by Sigarenfabriek "Wascana" N.V., Netherlands, pat. from 13 Mar 42, grant announced 21 Oct 43, pub. 7 Dec 43 (priority of application: Netherlands 17 Nov 41).

DESCRIPTORS: *Tobacco, Smokes, *Binders, Manufacturing methods

Calleson, Amos and Calleson, Edgar Augustus.
CONTAINER AND PROCESS FOR ITS MANUFACTURE, tr. by J. B. 19 Apr 63, 5p. (figs. omitted).
Order from OTS or SLA $1.10 63-19272

Trans. of German patent 713,514, cl. 81c, gr. 12, to Crown Cork & Seal Co., Inc., USA, pat. from 18 June 38, grant announced 16 Oct 41, pub. 8 Nov 41, (claimed priority of appl. USA, 5 Aug 37).

DESCRIPTORS: *Containers, Design, Processing, Manufacturing methods.

The invention concerns a container consisting of a container shell (envelope) and a bottom provided with a flanged edge, which both parts are joined by inward rolling of the shell edge about the outer edge of the bottom flange and between which parts cementing material is inserted in an annular chamber at the point of connection, characterized in that the bottom flange has an inwardly directed circumferential groove and the container shell has at the same height a corresponding circumferential corrugation likewise directed inwardly into the groove and having a smaller depth than the groove. (Author)

Dobrzycki, Jan.
CONTRIBUTION TO THE THEORY OF CONTINUOUS BOILERS. 1957, 11p. (figs. omitted).
Order from SLA $1.60 63-14883

Trans. of Gazeta Cukrownicza (Poland) 1955, v. 57, p. 157-159.

DESCRIPTORS: *Boilers, *Sucrose, Crystal growth, Manufacturing methods, Statistical analysis, Industrial equipment, Theory, Carbohydrates.

Osterwald, Karl.
METHOD FOR THE MANUFACTURE OF CIGARS, tr. by G. E. 21 Dec 62, 5p. (fig. omitted).
Order from OTS or SLA $1.10 63-15448

Trans. of German patent 861,373, cl. 79b, gr. 5/01, pat. from 13 Aug 50, pat. appl. announced 27 Mar 52, grant announced 6 Nov 52, pub. 29 Dec 52.

DESCRIPTORS: *Tobacco, Smokes, Manufacturing methods.

Transport, Traction and Hoist Facilities

USSR INDUSTRIAL DEVELOPMENT: SOVIET AUTOMOTIVE INDUSTRY NO. 33. 11 June 63, 24p. JPRS: 19647.
Order from OTS $0.75 63-31029

Trans. of Nauchno-Tekhnicheskoe Obshchestvo SSSR, 1963 [v. 5] no. 3, p. 36; and 19 selected articles from Mar 63 issues of 12 Russian newspapers.

DESCRIPTORS: *Industrial production, *Automotive industry, *Carburetors, Liquid metal pumps, *Electromagnetic pumps, Automation, *Ball bearings, Steel, *Piston rings, *Internal combustion engines, Towing vehicles, Towed vehicles, *Cargo vehicles, Trailers, Snow vehicles, *Passenger vehicles, *Motorcycles.

Contents:
Competition between Moscow and Leningrad carburetor plants, by P. Nikolaev

The domestication of liquid metal, by Oleg Kostko
Automation at the (Moscow) first bearing plant
Use of steel in production of piston rings (steel works) by N. Yakovlev
Eight-cylinder engine production mastered
NTO report on automatic lines for ST-8 starter housings
Belorussian plant develops large-tonnage vehicles
Komsomol cross-country vehicles, by A. Dokuchaeva
The function is the same, the designs are different
New MAZ vehicle on assembly line
Production at the Ul'yanovsk plant
Dump trucks from Belorussia
Kutaisi plant produces new truck-tractor, by V. Kadzhaya
Gor'kii institute develops GPI-37 snow-swamp tractor
ZIL plant produces the Yunost' autobus
KR-5 motorcycle developed
Serpukov design bureau develops KR-5 motor cycle
Lithuanian bicycle plant series produces the Sh-50, prepares for the SD-60
Zhukovskii plant's 300,000th bicycle
UAZ-469 passes tests.

Borisov, D. P.
AUTOMATION AND TELEMECHANICS FOR LINES WITH HIGH-SPEED TRAFFIC. [1963] [7]p.
Order from OTS or SLA $1.10 63-14727

Trans. of Zheleznodorozhnyi Transport (USSR) 1962 [v. 44, no. 10] p. 44-47.

DESCRIPTORS: *Railroads, Automatic, *Control systems, *Speed regulators, *Signal lights, *Traffic, Transportation.

An examination of how the installations for signalling, centralization and blocking can be developed and amplified for railroad lines with high-speed traffic.

Gal'perin, A., Nikolenko, V., and Makarov, I.
AUTOMOTIVE OPERATIONS IN SANDY AND DESERT TERRAIN (O Rabote Avtotransporta v Peschano-Pustynnoi Mestnosti) tr. by H. H. 24 Sep 62, 5p. (figs. omitted). I-3019.
Order from OTS or SLA $1.10 63-19736

Trans. of Avtomobil'nyi Transport (USSR) 1962 [v. 40] no. 5, p. 24-26.

DESCRIPTORS: *Deserts, Terrain, Transportation, *Cargo vehicles, *Trailers, Operation, Tires, Axle shafts, Cooling and ventilating equipment, *Roads, *Sand, Atmospheric temperature, *Motor vehicle operators, Fatigue (Physiology), *Pipelines, Construction.

Gitman, I. B. and Shchipakin, L. N.
BK-1425 ERECTING TOWER CRANE WITH A SEVENTY-FIVE TON LIFTING POWER. 8 Apr 63 [19]p. FTD-TT-63-279. AD-402 592.
Order from OTS or SLA $1.60 63-19342

Unedited rough draft trans. of Novaya Tekhnika Montazhnykh i Spetsial'nykh Rabot v Stroitel'stve (USSR) 1959 [v. 21] no. 9, p. 5-10.

DESCRIPTORS: *Hoists, Booms, Industrial equipment, Design.

Hoebrechts, J. J.
MAQUETTE: DESCRIPTION [AND] CHARACTERISTICS. [1962] [2]p. (fig. omitted).
Order from OTS or SLA $1.10 62-16334

Trans. of Belgian patent 517,042, 14 Feb 53, appl. 20 Jan 53.

DESCRIPTORS: Vehicles, Identification, *Vehicle accessories, Visibility.

Houri, A. Ghouila.
THE PROBLEM OF THE MAXIMUM FLOW IN TRANSPORTATION NETWORKS WITH CORRESPONDING CONSTRAINTS (Recherche du Flot Maximum dans Certains Reseaux Lorsqu'on Impose une Condition de Bouclage). [1963] [20]p. (foreign text included).
Order from SLA $1.60 63-14055

Trans. of mono. International Conference on Operational Research (no. 2) 1960. Proceedings, p. 156-163.

DESCRIPTORS: *Transportation, *Traffic, Networks, *Linear programming, Operations research.

We take a transportation network in which each entry arc is matched with an exit arc, and reciprocally; two such arcs are required to carry the same flow. Under such conditions we can obtain the maximum flow by applying the Ford-Fulkerson algorithm to a sequence of networks, each obtained from the partition of the preceding into marked and unmarked points. The result is obtained in a finite number of stages. (Author)

Kutassy, Lajos.
PRESTRESSED CONCRETE SLEEPERS. [1962] 5p.
Order from OTS or SLA $1.10 63-10758

Trans. of Zheleznodorozhnyi Transport (USSR) 1962 [v. 44, no. 9] p. 44-47.

DESCRIPTORS: *Concrete, *Foundations (Structures), *Railroad tracks, *Reinforced concrete, Design, Railroads.

Laizner, Hans.
RAILS MADE FROM LD STEEL: THEIR PROPERTIES AS SHOWN BY THE RESULTS OF ADMISSION TESTS AND WORKS AND ACCEPTANCE TESTS (Vollbahnschienen aus LD-Stahl: Ihre Eigenschaften als Ergebnis der Zulassungsprüfung sowie der Laufenden Ausgangskontrolle und Abnahme). Oct 57 [13]p. (foreign text included).
Order from SLA $1.60 61-16291

Trans. of [Stahlbau Rundschau] (Austria) 1957, v. 3, no. 2, p. 29-31.

DESCRIPTORS: *Railroad tracks, *Steel, Mechanical properties, Fricition, Tests, Welds

Matthys, G.
MAXIMUM INPUT IN A NETWORK OF LINKED BUNDLES (Flot Optimum dans un Reseau a Capacites de Faisceaux). [1963] [17]p. (foreign text included) 5 refs.
Order from SLA $1.60 63-14056

Trans. of mono. International Conference on Operations Research (no. 2) 1960. Proceedings, p. 164-170.

DESCRIPTORS: *Transportation, *Traffic, Networks, Operations research, *Linear programming.

Certain problems of flow introduce restraints of maximum capacities relative to sets of arcs. Such sets, disjointed or not, are here designated by the name of bundles. The application of the method of resolution of linear programs known by the name of "primal-dual" then permits substituting for classic, geometric algorithms, a more general algorithm which associates graphic procedures and algebraic calculation. (Author)

Ricard, M. J. and Quennet, J.
EXAMPLES OF THE APPLICATION OF THE THEORY OF GRAPHS TO RAILROAD OPERATIONS. 1. MAXIMUM OUTPUT BETWEEN TWO SORTINGS. 2. CONSTRUCTION OF ROTATION OF TRACTION ENGINES (Deux Exemples d'Application de la Theorie des Graphs a l'Exploitation Ferroviaire. 1. Debit Maxim entre Deux Triages. 2. Construction des Roulements d'Engins de Traction). [1963] [22]p. (foreign text included).
Order from SLA $2.60 63-14057

Trans. of mono. International Conference on Operational Research (no. 2) 1960. Proceedings, p. 699-708.

DESCRIPTORS: *Railroads, *Traffic, *Transportation, *Locomotives, Rotation, *Graphic analysis, Operations research, *Linear programming.

MATERIALS

POLYAMINES. [1963] 13p.
Order from OTS or SLA $1.60 63-14347

Trans. of Belgian patent 560,446, internat'l convention: U. S. application 666,234, 17 June 57, in the name of G. Cavaglieri Tesoro, E. I. Valko and A. Freiman.

DESCRIPTORS: *Polyamide plastics, Synthesis (Chemistry), *Amines, Polymers, *Glycols, Ethylenes, Esters, Halocarbons, *Textiles, Impregnation, *Finishes, Moisture proofing, Static, Inhibition, Dyes, Absorption.

The present invention relates to novel reaction products of primary alifatic monoamines with diesters resulting in alkylation of N. An object of the invention is the preparation of water-soluble polymers of alifatic, primary, monoamines and alkyl diesters, particularly polyethylene glycol, the new water-soluble products thus obtained and insoluble products arising therefrom. A further object of the invention is a process for the improvement in the finishing of textile materials (water-repellant) to impart anti-electrostatic properties and improve dye takeup. (Author)

PROCESS FOR THE PREPARATION OF CONDENSATION PRODUCTS. [1963] 4p.
Order from OTS or SLA $1.10 63-14339

Trans. of Belg[ian] pat[ent] 448,187, issued 31 Dec 42, by Thuringsche Zellwolle A.-G.

DESCRIPTORS: *Fibers (Synthetic), *Plastics, *Isocyanate plastics, *Polyamide plastics, Synthesis (Chemistry), Methanes, Xylenes, Phenyl radicals, Isocyanates, Glutaric acids, Adipic acid, Sebacic acid, Phthalic acids, Amides, Propanes, Acetamides, Condensation reactions.

The present invention relates to a process for manufacturing condensation products in the form of filament-like molecules of high molecular weight and derived from free diisocyanates and carboxylic acid amides. These types of condensation products are useful for the manufacture of thread, thin membranes, and fluid masses for extrusion or molding and similar synthetic products. (Author)

TRANSACTIONS OF THE SEMINAR ON HEAT-RESISTANT MATERIALS, 1959, VOL. 4: SELECTED ARTICLES. 12 Feb 63 [78]p. 76 refs. FTD-TT-62-1252; AD-400 515.
Order from OTS or SLA $7.60 63-19675

Unedited rough draft trans. of Seminar po Zharostoikim Materialam. Trudy (USSR) 1959, v. 4, p. 38-64, 96-115.

DESCRIPTORS: *Metals, *Fuel additives, *Gas turbines, Erosion, Melting, Surfaces, Ceramic materials, Liquid metals, Oxides, Carbides, Surface properties, High temperature research, Cermets, Iron, Vanadium, Nickel, Measurement, Alloys, Chromium, Corrosion inhibition, Oxidation, Sodium compounds, Sulfates, Chlorides, Degradation, Abrasives, Surface tension, Materials.

Contents:
An investigation of wetting of the solid surfaces of certain high-melting compounds by molten metals, by V. N. Eremenko and Yu. V. Naidich
Maximum gas-bubble pressure method as applied to determination of surface tension of metals of the iron family, by V. V. Fesenko and V. N. Eremenko
Influence of ash-forming components in liquid fuel on deterioration of gas-turbine materials, by R. F. Mocharnyuk
Comparative investigation of erosion resistance of high-temperature corrosion-resistant materials of gas turbines operating on solid fuel, by K. V. Olesevich.

Backhaus, K.
SOME ADVANCES IN THE FIELD OF MATERIALS FOR ELECTRICAL HEATING TECHNIQUE. 23 Oct 62, 2p. (figs. refs. omitted).
Order from SLA $1.10 62-20379

Partial trans. (excerpt p. 190) of Elektrowärme (West Germany) 1958, v. 16, no. 6, p. 189-194.

DESCRIPTORS: *Heating elements, *Molybdenum compounds, *Silicides, Powder metallurgy, Construction, Installation, Surface temperature, Electricity.

Brice, M. L. P.
CRACKING: [PROCEEDINGS OF THE FIFTH WORKING SESSION, VIENNA, 1959]. [1962] [14]p.
Order from SLA $1.60 63-10205

Trans. from Comité Européen du Béton [Paris]. Bulletin d'Information (France) 1959, no. 24.

DESCRIPTORS: *Reinforced concrete, Reinforcing materials, Loading (Mechanics), *Fracture (Mechanics), Mathematical analysis. Structures.

Debecq, Albert.
PROPERTIES OF SODIUM SILICATE. [1963] [9]p.
Order from SLA $1.10 63-14144

Trans. of Cong[rès de] Chim[ie] Ind[ustrielle. Compte Rendu Analytique] 1936 [v. 16] p. 45-49.

DESCRIPTORS: *Sodium compounds, *Silicates, *Adhesives, Viscosity, Porosity, Carbon dioxide, Chemical reactions, Temperature.

Dem'yanov, Yu. A. and Chereshneva, N. V.
METHOD OF DETERMINING THE THERMOPHYSICAL CHARACTERISTICS OF INSULATING MATERIAL BY USING THE IMPULSE OF A SHOCK WAVE AS A HEATER. 16 Jan 63 [5]p. 4 refs.
FTD-TT-62-332. AD-297 567.
Order from OTS or SLA $1.10 63-15706

Unedited rough draft trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Mekhanika i Mashinostroenie, 1961, no. 1, p. 153-154.

DESCRIPTORS: Determination, *Heat transfer, *Thermal insulation, Thin films, *Shock waves, *Measurement, Temperature, Resistance thermometers, Mathematical analysis

Melly, M.
TYPE OF MUSICAL BOTTLE, tr. by G. E. 28 Jan 63, 3p. (figs. omitted).
Order from OTS or SLA $1.10 63-15439

Trans. of French patent 86,481, 15 July 1869.

DESCRIPTORS: *Music, Clocks, *Containers, Beverages.

The present invention has for its object the application of small cylindrical musical devices to bottles, decanters, jugs (pitchers) of all types; the musical device is mounted on a wooden disk underneath said bottles, in such manner as to be completely concealed. When pouring of the bottle is simulated and it is inclined to an angle of approximately 45°, the stop (detent) which restrains the pin-studded cylinder is actuated and the clock mechanism, being thus released, causes the musical device to play, and this continues when the bottle is placed on the table. (Author)

Moenaert, P.
SIMPLIFIED METHODS OF FLEXURAL ULTIMATE LOAD ANALYSIS: [PROCEEDINGS OF THE FIFTH WORKING SESSION, VIENNA, 1959]. [1962] [21]p.
Order from SLA $2.60 63-10203

Trans. from Comité Européen du Béton [Paris]. Bulletin d'Information (France) 1959, no. 24.

DESCRIPTORS: *Reinforced concrete, *Loading (Mechanics), Reinforcing materials, Mathematical analysis, Structures, *Deformation, Compressive properties

Rüsch, H.
SCIENTIFIC RESEARCH CONCERNING FAILURE IN BENDING AND IN COMPRESSION: [PROCEEDINGS OF THE FIFTH WORKING SESSION, VIENNA, 1959]. [1962] 18p.
Order from SLA $1.60 63-10202

Trans. from Comité Européen du Béton [Paris]. Bulletin d'Information (France) 1959, no. 24.

DESCRIPTORS: *Reinforced concrete, Reinforcing materials, Failure (Mechanics), *Deformation, Compressive properties, *Loading (Mechanics), Mathematical analysis, Structures.

Soretz, S.
DEFORMATIONS: [PROCEEDINGS OF THE FIFTH WORKING SESSION, VIENNA, 1959]. [1962] 17p.
Order from SLA $1.60 63-10206

Trans. from Comité Européen du Béton [Paris]. Bulletin d'Information (France) 1959, no. 24.

DESCRIPTORS: *Reinforced concrete, Reinforcing materials, *Deformation, Mathematical analysis, Structures, Loading (Mechanics), Mechanical properties

Soretz, S.
STEELS-BOND-ANCHORAGES: [PROCEEDINGS OF THE FIFTH WORKING SESSION, VIENNA, 1959]. [1962] [4]p.
Order from SLA $1.10 63-10204

Trans. from Comité Européen du Béton [Paris]. Bulletin d'Information (France) 1959, no. 24.

DESCRIPTORS: *Reinforced concrete, Reinforcing materials, Design, Loading (Mechanics).

Uhlig, Fritz.
PLANOGRAPHIC PLATE. [1962] 4p.
Order from OTS or SLA $1.10 63-10257

Trans. of German patent (Auslegeschrift 1,134,093, by Kalle Aktiengesellschaft, appl. 5 Aug 60, pub. and issue of the Auslegeschrift, 2 Aug 62.

DESCRIPTORS: *Printing, Metal plates, Aluminum, Coatings, Phosphonic acids, Lithography.

The present invention relates to printing plates for lithoprinting in which aluminum finds use as the supporting material for the copying layers; the aluminum is provided with a thin coating which consists of one or several phosphonic acids and/or their derivatives.

Ceramics and Refractories

Albrecht, F.
NEW TYPES OF HARD MATERIALS FROM GLASS (Neuartige Hartstoffe aus Glas). [1963] [8]p.
Order from SLA $1.10 63-14373

Trans. of mono. Beispiele Angewandter Forschung, herausgegeben von der Fraunhofer Gesellschaft z. Förderg. d. Wissenschaften, München, 1955, p. 19-22.

DESCRIPTORS: *Glass, Hardness, Heat treatment, Crystallization, Nucleation, Magnesium compounds, Aluminum compounds, Silicon compounds, Dioxides, Tin compounds, Titanium compounds, Oxides, Bearings, *Ceramic materials.

Brokhin, I. S., Zolotarev, I. S. and others.
OBTAINING AND INVESTIGATION OF SOME PROPERTIES OF THE DISILICIDE OF MOLYBDENUM. 3 May 63 [19]p. 8 refs. FTD-TT-63-120.
Order from OTS or SLA $1.60 63-19668

Unedited rough draft trans. of Vsesoyuznyi Nauchno-Issledovatel'skii Institut Tverdykh Splavov. Sbornik Trudov (USSR) 1960, v. 2, p. 24-36.

DESCRIPTORS: *Molybdenum, *Silicides, *Refractory materials, Alloys, Material separation, Mechanical properties, Plasticity, Stability, Microstructure, Metallography, Chemical analysis.

The conditions of extraction were studied of the solid disilicide of molybdenum by the method of hot compression (baking under pressure) of the mixture of fine powders of molybdenum and silicon at comparatively low temperatures (1100-1200°). The systems and conditions are established for the preparation of solid specimens by repeated hot compression (caking) of the powdered disilicide. The conformity of the specimens to the disilicides of molybdenum ($MoSi_2$) is confirmed by the X-ray and chemical analysis, and also by metallo-graphic investigation, and by a determination of the micro-solidity and blister-resistance of the specimens. The hot solidity (to 1000°), the micro-solidity and blister-resistance (at 1200°) of the obtained specimens of the disilicide were defined. By the investigation of the alloys $MoSi_2$ with a surplus of silicon in the mixture against a stoichiometric composition, it was shown that 5% surplus of silicon is conducive to obtaining solid specimens with optimum mechanical properties. The breaking point for bending was defined for the indicated specimens at 20, 1000, 1100 and 1200°. By the method of testing for protracted bending at 1200° in a special setting, the plastic deformation of the specimens of pure $MoSi_2$ and $MoSi_2$ + 5% Si was computed at comparatively small loads, according to the camber of the specimens. (Author)

Budnikov, P. P. and Belyaev, R. A.
SYSTEMS WITH BERYLLIUM OXIDE AND THEIR USE IN TECHNOLOGY. 13 Mar 63 [19]p. 89 refs. FTD-TT-62-1712; AD-299 870. 63-19699

Unedited rough draft trans. of Vsesoyuznoe Khimicheskoe Obshchestvo. Zhurnal (USSR) 1961, v. 6, no. 6, p. 629-635

DESCRIPTORS: *Beryllium compounds, *Oxides, Cermets, Dielectric properties, Mechanical propreties, *Glass, Spark plugs, Reactor materials, Aluminum compounds, Boron compounds, Calcium compounds, Uranium compounds, Cerium compounds, Cobalt compounds, Chromium compounds, Copper compounds, Iron compounds, Gallium compounds, Indium compounds, Lanthanum compounds, Magnesium compounds, Nickel compounds, Phosphorus compounds, Scandium compounds, Silicon compounds, Tin compounds, Complex compounds, Heating elements, Dies, Ceramic coatings, Semiconductors, X-rays.

Churabo, Dmitrii Dmitrievich.
NEW NONMETALLIC MATERIALS FOR RADIO EQUIPMENT: MANUAL FOR DESIGNERS. 3 May 63 [28]p. FTD-TT-62-1873.
Order from OTS or SLA $2.60 63-19674

Unedited rough draft trans. of mono. Novye Nemetallicheskie Materialy dlya Radioapparatury: Spravochnoe Posobie dlya Konstruktorov, Moscow, 1961, p. 131-150.

DESCRIPTORS: *Radio equipment, Materials, *Ceramic materials, Magnesium compounds, Silicates, *Talic, *Zirconium compounds, Clays, Ceramic capacitors, *Aluminum compounds, Oxides, *Corundum, *Mullite, *Glass, Organic substances, *Plastics, *Composite materials, Physical properties, Mechanical properties, Electrical properties.

Basic technical data are given for the following: High-frequency vacuum-tight materials; forsterite; steatites; zircon; radio control ceramics; ultra-porcelains; technical porcelains condenser ceramics; vacuum ceramics; pyrophyllite; corundomullite ceramics; organic glass ST-1 and ST-2-55; organic triplex of the types OT-16 and OT-ST-1; organic aviation glass ST-1; glass S-88-13; and glass ZS-11.

Ewald, W.
TESTING THE COOLING OF GLASS, INCLUDING COMMENTS BY O. KNAPP AND P. SELENYI. [1963] [15]p. (figs. omitted).
Order from SLA $1.60 63-14384

Trans. from die Glas-Industrie (Germany) 1929 [v. 37] July and Aug.

DESCRIPTORS: *Glass, *Cooling, Tensile properties, Stresses, Test equipment, Tests, *Quality control, Optical analysis

Garve, T. W.
THE SEPARATION OF GRANULATED SUBSTANCES IN STORAGE CONTAINERS (Die Entischung Gekörnter Stoffe in Vorratsbehältern). [1962] 12p. (figs. omitted) 3 refs.
Order from SLA $1.60 62-18825

Trans. of Keramische Rundschau und Kunstkeramik (Germany) 1936, v. 44 [no. 20] p. 231-234 and p. 282-283.

DESCRIPTORS: Separation, *Powders, Mixtures, Particles, *Storage tanks, Conveyors, *Ceramic materials, Processing.

Lungu, S. N. and Popescu-Has, D.
CERAMIC MASSES OBTAINED AT THE CRYSTALLIZATION OF SILICATE MELTS (Mase Ceramice Obtinute prin Cristalizarea Topiturilor de Silicati). [1963] [21]p. (foreign text included) 4 refs.
Order from SLA $2.60 63-14075

Trans. of Acad[emia] Rep[ublicii] Populare Romine. Studii se Cercetari de Chimie (Rumania) 1955, v. 3, no. 3/4, p. 225-232.

DESCRIPTORS: *Silicates, *Crystallization, *Melting, Nucleation, *Ceramic materials, Crystal structure, X-ray diffraction analysis

Pisarenko, G. S. and Troshchenko, V. T.
STATISTICAL THEORIES OF STRENGTH AND THEIR APPLICATION TO METALLOCERAMIC MATERIALS, CHAPS. 2-4: SELECTED PARTS. 22 Apr 63 [104]p. FTD-TT-62-1765.
Order from OTS or SLA $9.10 63-19666

Unedited rough draft trans. of mono. Statistichni Teorii Mitsnosti ta Ikh Zastosuvannya do Matalokeramichniki Materialiv, Kiev, 1961, p. 13-19, 40-102.

DESCRIPTORS: *Cermets, *Heat resistant metals and alloys, Mechanical properties, Carbides, Titanium alloys, Chromium alloys, Tungsten alloys, Silicon alloys, Niobium alloys, Zirconium alloys, Boron alloys, Tantalum alloys, Aluminum compounds, Beryllium compounds, Magnesium compounds, Zirconium compounds, Oxides, Dioxides, Molybdenum compounds, Silicides, Silicon compounds, Nitrides, Graphite, Brittleness, *Failure (Mechanics), Theory, *Metallography.

Contents:
Peculiaritiesof the breakdown of brittle metalloceramics
Statistical theories of brittle strength
Investigation of the laws governing the breakdown of heat resistant metalloceramic materials.

Salmang, H. von. and Stoetzer, K. von.
THE INFLUENCE OF THE HEAT TREATMENT OF GLASSES UPON THEIR DENSITY AND CHEMICAL RESISTIVITY. [1963] 2p.
Order from SLA $1.10 63-14382

Abstract trans. of Glastechnische Berichte (Germany) 1930, v. 8, no. 8, p. 463-482.

DESCRIPTORS: *Glass, Heat treatment, Quenching (Cooling), Density, Chemical properties, Resistance.

Sasek, Ladislav.
A METHOD FOR THE STUDY OF THE SOLUBILITY OF SILICA IN GLASS MELTS. [1963] [24]p. (figs. omitted) 29 refs.
Order from SLA $2.60 63-14737

Trans. of Silikaty (Czechoslovakia) 1962, v. 6, no. 3, p. 281-290.

DESCRIPTORS: *Silicon compounds, *Dioxides, Solubility, *Glass, Melting, Petrology, Sand, Chemical analysis, Reactions kinetics.

The dissolution rate of quartzite sand grains in formed glass melt can be measured by the method used in this research with comparative ease and sufficient accuracy. All previously used methods for the observation of the course of glass melting suffer from significant shortcomings in this respect. For this reason, the suggested method may be an important contribution to the elucidation of the most time-consuming process in glass melting, i.e. the dissolution of the residue of unreacted quartzite sand grains in the glass melt formed in the reactions between silica and the other ingredients of the glass batch. (Author)

Schätzer, Leon.
A NEW MATERIAL FOR CERAMIC MASTER-MOLDS. [1963] 5p.
Order from SLA $1.10 63-16056

Trans. of Silikat Technik (East Germany) 1951, v. 2 [no. 3] p. 80.

DESCRIPTORS: *Molding, Ceramic materials, *Molding materials, *Gypsum, Mechanical properties, Physical properties.

Trier, W[olfgang].
RAW MATERIAL GRANULATION AND BATCH MOISTURE. [1963]. BGIRA Tr. 63/17.
Order from BGIRA BGIRA-550

Trans. of mono. Report to Fachausschuss III der D. G. G., 5 Apr 62.

DESCRIPTORS: *Glass, *Materials, Processing, *Moisture.

[Tykachinskii, I].
HARDER THAN STEEL, LIGHTER THAN ALUMINUM. 4 Mar 63 [3]p. FTD-TT-62-1910.
Order from OTS or SLA $1.10 63-19286

Unedited rough draft trans. from [Ekonomicheskaya Gazeta] (USSR) 1959, no. 28(483) 6 Mar, p. 4.

DESCRIPTORS: Glass, Crystal structure, Heat treatment, Processing, *Ceramic materials.

A non-technical report on SITAL, a microcrystalline ceramic material.

Vavilov, V. V.
SITAL FROM SLAGS: A PATH INTO LIFE. 25 Apr 63 [8]p. FTD-TT-63-60.
Order from OTS or SLA $1.10 63-19670

Unedited rough draft trans. from Ekonomicheskaya Gazeta (USSR) 1961 [no. 19] p. 19.

DESCRIPTORS: *Ceramic materials, Glass, Slags.

A nontechnical discussion concerning a high strength, heat and wear resistant microcrystalline glass from metallurgical slags.

Zhunina, L. A. and Tinyakov, N. A.
NEW GLASS FOR HIGH-VOLTAGE INSULATORS. 30 Apr 63 [9]p. 4 refs. FTD-TT-63-256.
Order from OTS or SLA $1.10 63-19672

Unedited rough draft trans. of Izvestiya Vyshikh Uchebnykh Zavedenii. Energetika (USSR) 1960 [v. 3] no. 7, p. 51-55.

DESCRIPTORS: *Glass, *Electric insulation, Production, Analysis, Electric potential.

As a result of the work carried out, glasses were obtained that were suitable with respect to a complex of properties for the manufacture of high-voltage insulators. Abundant and inexpensive materials serve as the raw material for these glasses. The final refinement of all characteristics and final working out of recommendable compositions of the glasses must be carried out during the manufacturing of test batches of high-voltage insulators under industrial conditions on a machinery of factory size. (Author)

Fuels, Lubricants, and Hydraulic Fluids

HYDROGENATED COAL TAR PRODUCTS AS POSSIBLE CONSTITUENTS OF T-5 FUEL: STUDY AND COMMENT. Rept. no. 19 on Work Assignment no. 28. 22 Mar 63 [5]p. 4 refs. AID rept. P-63-39.
Order from OTS or SLA $1.10 63-19030

DESCRIPTORS: *Hydrogenation, *Coal, *Tar, Fuels, Fractionation, Chemical reactions, *Jet engine fuels.

Effective methods were sought for the production of fuels and chemicals from hydrogenated coal tar. A study was made in which a refined hydrogenation product of Cheremkhovo coal tar was submitted to hydrogenation at 75 atm and 510°C on a catalyst which contained 14.77% MoO_3, 76.05% Al_2O_3, 0.59% Fe_2O_3 and 8.59% bound H_2O. The following yield was obtained with 3.3% hydrogen spent: 62.1% gasoline, 15.5% distillation bottoms, 20.3% gaseous hydrocarbons C_1-C_5 and 5.4% other gases and losses. Attempts were also made to extract chemicals from the anthracenic fraction of coking tar.

Danilov, I. N. and Murzabulatov, Kh. A.
FACTORS INFLUENCING THE THERMOSTABILITY OF JET ENGINE FUELS. 14 May 63 [20]p. 13 refs. FTD-TT-63-343.
Order from OTS or SLA $1.60 63-19723

Unedited rough draft trans. of mono. Sernistye Nefti i Produkty Ikh Pererabotki, Moscow, 1962, p. 238-250.

DESCRIPTORS: *Jet engine fuels, Stability, *Thermodynamics, Tests.

The thermostability of fuel TS-1 on contact with air satisfies the demands for thermostability at temperatures up to 100-110°. When a nitrogen blanket or blanket of fuel vapors is over the fuel the thermostability of fuel is significantly increased. A change of the heating rate, an increase of the heating length, cooling the fuel, and its repeated heating up to the same temperature little affects the thermostability index of the fuel. When the fuel contacts air its thermostability does not depend on the preheating temperature if the latter does not exceed the maximum heating temperature. When the fuel contacts the nitrogen, the thermostability of the fuel is determined not only by the maximum heating temperature, but also by its preheating temperature, whereupon as this temperature approaches maximum, the thermostability of the fuel is increased. (Author)

Kuliev, R. Sh. and Sadykhova, B. A.
HYDROPURIFICATION OF A REFINED DIESEL OIL. 30 Jan 63 [7]p. FTD-TT-62-1735; AD-299 673.
Order from OTS or SLA $1.10 63-19212

Unedited rough draft trans. of Khimiya Tekhnologiya Topliv i Masel (USSR) 1962 [v. 7] no. 5, p. 32-34. Another trans. is available from ATS $5.00 as ATS-57P63R [1962] 5p.

DESCRIPTORS: *Oils, Lubricants, Purification, Hydrogenation, Catalysts, *Diesel engines, *Fuel oil, Fuel contamination, Aluminum alloys, Cobalt alloys, Molybdenum alloys, Tungsten compounds, Sulfides.

Preliminary investigations have established the possibility of replacing contact-acid repurification of a refined diesel oil from a mixture of Baku nonparaffinic petroleums by hydropurification with the industrial catalysts Al-Co-Mo and WS_2. Hydropurification with Al-Co-Mo catalysts at a temperature of 350°C and a pressure of 50 atm (tech) produces a diesel oil with somewhat better physicochemical properties than the corresponding oil obtained by repurification of the refined oil with 1% sulfuric acid and 5% clay. Hydropurification carried out at pressures greater than 50 atm (tech) [100-150 atm (tech)] produces oils of considerably better quality than acid-contact repurification oils. It was established that the WS_2 catalyst has

a greater hydrogenating capacity than the Al-Co-Mo catalyst. However, an increase in temperature above 300°C leads to cracking in the presence of WS_2. (Author)

Obolentsev, R. D., ed.
CHEMISTRY OF ORGANIC SULFUR COMPOUNDS IN PETROLEUM AND PETROLEUM PRODUCTS (Khimiya Sera-Organicheskikh Soedinenii, Soderzhashchikhsya v Neftyakh i Nefteproduktakh). 1963, 199p. 146 refs. PL-480 Int.
Order from OTS $2.00 61-31074

Trans. of mono. Akademiya Nauk SSSR, Bashkirskii Filial, Materialy Vtoroi Nauchno Sessii po Khimii Sera-Organicheskikh Soedinenii, Ufa, 9-12 July 56, pub. 1958.

DESCRIPTORS: Fuels, Chemistry, *Petroleum, Organic compounds, *Sulfur compounds, *Oils, *Kerosene, *Sulfides, *Thiophenes, *Thiols, Reagents, *Sodium compounds, *Lubricants, *Corrosive liquids, Separation, *Towers (Chemistry), Purification, Hydrogenation, Desulfurization, *Ores, Stability, Chemical analysis, *Chromatographic analysis, *Polarographic analysis, *Ultraviolet spectroscopy, *Gas turbines, *Fuel systems, *Internal combustion engines, Operation.

Contents:
Organic sulfur compounds of petroleum origin (with discussion) by R. D. Obolentsev
The cyclic sulfides in a kerosene distillate from crude oil from carboniferous deposits of the Tuimazy oil field (with discussion) by R. D. Obolentsev and B. V. Aivazov
Installation for the chromatographic separation of organic sulfur compounds from petroleum distillates (with discussion) by N. M. Ivanova and others
The construction of large-scale chromatographic installations for separating concentrates of organic sulfur compounds from petroleum products (with discussion) by N. G. Gorskaya
The thermal stability of the organic sulfur compounds of Sernovodsk crude oils of the Kuibyshev region (with discussion) by E. I. Skripnik
The thermal stability of the organic sulfur compounds contained in crude oils of the Tuimazy oil field (with discussion) by R. D. Obolentsev and B. V. Aivazov
The evaluation of the corrosive properties of sulfur-bearing petroleum oils, by L. D. Zakharochkin and S. T. Meshcheryakov
Action of organic sulfur compounds on metals in the fuel system of gas-turbine engines (with discussion) by Ya. B. Chertkov and V. N. Zrelov
Synthesis of compounds of the aliphatic series from thiophene and its homologs (with discussion) by S. Z. Taits
Synthesis of certain organic sulfur compounds of the type contained in crude oils, by R. D. Obolentsev and others
Determination of the degree of purity of synthetic organic sulfur compounds, by R. D. Obolentsev and others
Ultraviolet absorption spectra of certain sulfides and disulfides, by R. D. Obolentsev and N. S. Lyubopytova
A rapid method for determination of total sulfur in crude oils and petroleum products, by S. T. Baibaeva and others
Differential polarography for determination of elemental sulfur and disulfides in certain hydrocarbon solutions, by R. D. Obolentsev and A. A. Ratovskaya
Determination of mercaptan sulfur in fuels, by Z. N. Moguchaya
Hydrogenation refining of distillate fractions of eastern crude oils without external introduction of hydrogen (with discussion) by A. D. Sulimov and others
Refining and desulfurization of petroleum products with simultaneous ore dressing, by A. A. Balandin and others
Research work carried out by the Bashkir Scientific Research Institute of Petroleum Industry on the reduction of consumption of alkali reagents (with discussion) by B. E. Stankevich
The effect of sulfur content in fuel on the performance of engines (with discussion) by L. V. Malyavinskii and I. A. Chernov
Investigation of the effect of organic sulfur compounds on anti-wear (wear-inhibiting) properties of lubricating oils, by O. E. Morozova and others
Problems of study of organic sulfur compounds in crude oils and petroleum products, by R. D. Obolentsev.

Papok, K. K. and Semenido, E. G.
MOTOR, JET, AND ROCKET FUELS. 16 Apr 63 [995]p. 785 refs. FTD-TT-62-1308.
Order from OTS or SLA $36.00 63-19683

Unedited rough draft trans. of mono. Motornye Reaktivnye i Raketnye Topliva, Moscow, 1962, 741p.

DESCRIPTORS: *Fuels, Petroleum, Production, Viscosity, Vaporization, Combustion, Hydrogen, Scale, Mixtures, Tar, Corrosion, Fuel additives, Antiknock, Aviation fuels, Gasoline, Fuel oil, *Jet engine fuels, *Liquid rocket fuels, Liquid rocket propellants, Liquid rocket oxidizers, Monopropellants, Fuel filters, Ignition, Toxicity, Bibliographies.

This book examines in detail the physicochemical and operational properties of aviation, jet, rocket, automotive, diesel, and boiler fuels, as well as the basic problems relating to the qualities and utilization of these fuels in engines and aircraft assemblies and ground machinery. Individual chapters of the book are devoted to the most important problems in the area of fuels - corrosion and scale-formation properties, heat of combustion, low-temperature properties, tar formation, deposition, etc. (Author)

Schmidt, A. W. and Beck, H.
REVIEW OF THE PREVIOUSLY ADDED SYNTHETIC PEROXIDES: PRELIMINARY LISTING. [1963] 4p.
Order from SLA $1.10 63-14268

Trans. from unidentified German language mono., n.p., n.d.

DESCRIPTORS: *Peroxides, *Combustion, Catalysis, Fuels, Additives, Solubility, Gasoline, Ignition.

It is shown that the idea of adding peroxides to accelerate the course of combustion is basically

correct. However, as the experiments have shown, the peroxides studied up to the present time play only a minor role in connection with the fuels studied. (Author)

Schmidt, A. W. and Beck, H.
STUDIES OF HYDROCARBONS WITH ATTACHED ACTIVE OXYGEN, COMMUNICATION NO. XV, 1 (FRAGMENT). [1963] 2p.
Order from SLA $1.10 63-14258

Trans. from unidentified German language mono., n.p., 30 Mar 41.

DESCRIPTORS: Hydrocarbons, *Fuel oil, Oxygen, *Fuel additives, *Ignition, Gasoline, Phosphorus, Carbon compounds, Sulfides, Nitrogen compounds, Organic acids.

Topics include the addition of phosphorus in carbon bisulfide, and the addition of styphnic acid to a fuel low in gasoline. (See also 63-14257)

Schmidt, A. W. and Beck, H.
STUDIES ON HYDROCARBONS WITH ATTACHED ACTIVE OXYGEN: TREATMENT OF FUELS (CHEMICAL PART) COMMUNICATION NO. XIII. [1963] 6p.
Order from SLA $1.10 63-14257

Trans. from unidentified German language mono., n.p., 1 Apr 41.

DESCRIPTORS: Hydrocarbons, *Fuel oil, Oxygen, *Fuel additives, *Ignition, Nitration, *Ozone, Methyl radicals, Alcohols, Nitrogen compounds, Gasoline.

In Kogasin II, also, the highest boiling constituents exhibited the highest ignition tendencies. Nitration increases the ignition tendency of Kogasin II, but shows no considerable variation in effect as between the various fractions. Ozone treatment increases the ingition tendency of Kogasin II, likewise without special variation as between the different fractions. Selective treatment with methyl alcohol does not alter previously ozonized Kogasin I. Nitration of previously ozonized Kogasin I reduces the effect resulting from the ozonization. Combination of ozone treatment with additives results in an increased effect in the case of Kogasin I. Addition of a nitro compound of the explosive type results in but slight improvement in the ignition tendency of Kogasin I. The ignition tendency of Ruhr gasoline rises with the boiling point. The ignition tendency of Ruhr gasoline may be increased considerably by ozone treatment. (Author) (See also 63-14256)

Schmidt, A. W. and Beck, H.
STUDIES OF HYDROCARBONS WITH ATTACHED ACTIVE OXYGEN: TREATMENT OF FUELS, COMMUNICATION NO. XV, 1 (CHEMICAL PART). [1963] 8p.
Order from SLA $1.10 63-14259

Trans. from unidentified German language mono., n.p., 30 May 41.

DESCRIPTORS: Hydrocarbons, *Fuel oil, Oxygen, *Fuel additives, *Ignition, Gasoline, Nitration, Ozone, Tetryl, Chlorine compounds, Nitrogen compounds, Chloroform.

Large scale nitration yields an insoluble by-product of very high ignition tendency. The individual fractions of Ruhr gasoline show a rise in ignition tendency with boiling point. The influence of the duration of the ozone treatment upon the ignition tendency of Ruhr gasoline is discussed (Maximum cetane number attained = 140). Two explosives which are hardly soluble in Ruhr gasoline have no effect upon its ignition tendency. Of 9 different types of additives, nitrosomethylurethane and chloropicrin are especially effective for raising the ignition tendency. (Author) (See also 63-14258)

Sugahara, Mitsuji and Iwasaki, Taizo.
LOW GRADE FUEL FIRING IN THE CYCLONE FURNACE. [1963] 24p. (figs. omitted) 8 refs.
Order from SLA $2.60 63-16219

Trans. of Nenryo Kyokai-Shi (Japan) 1959, v. 38, no. 386, p. 361-373.

DESCRIPTORS: *Fuels, *Coal, *Cyclone furnaces, *Combustion, Slags, Ash, Effectiveness, Design, Economics.

The paper is devoted to the comprehensive discussion of economical methods of firing low grade coal by means of the cyclone, with special reference to the raising of the firing temperature, the lowering of the slag fusion temperature, etc. by a mixture of good grade coal, an addition of lime stones and heat recovery of the slag and the effective utilization of the slag as problems surrounding the use of low grade coal.

Zinner, Karl.
THE PRESENT STATE OF KNOWLEDGE CONCERNING MIXTURE FORMATION IN OTTO AND DIESEL ENGINES. 2 June 48, 14p. (figs. omitted) 30 refs.
Order from SLA $1.60 63-14271

Trans. of Verein Deutscher Ingenieure. Zeitschrift (Germany) 1939, v. 83, no. 6, p. 141-147.

DESCRIPTORS: *Fuel oil, Diesel engines, Internal combustion engines, Combustion, Ignition, *Air, *Fuel injection, Fuel nozzles, Combustion chambers.

Leather and Textiles

PROCESS AND MACHINE FOR CLEANING AND DYEING OF WEARING APPAREL, FABRICS AND OTHER ARTICLES, tr. by J. B. 30 Nov 62, 21p. (figs. omitted).
Order from OTS or SLA $2.60 63-13746

Trans. of French patent 849,920, gr. 16, cl. 5, by Georges Lévy, appl. 12 Aug 38, granted 28 Aug 39, pub. 5 Dec 39.

DESCRIPTORS: *Clothing, *Textiles, Processing, Machines, *Cleaning, *Dyeing.

The objects of the invention are an improved process and a machine for treating apparel, fabrics and other articles, especially with respect to their cleaning, either by the chemical method, so-called "dry" cleaning by means of a noninflammable solvent such as trichlorethylene, or cleaning by means of water, "wet" cleaning, as well as for dyeing. (Author)

Coover, Harry Wesley, Jr. and Joyner, Frederick Brownt.
FIBERS OF DYEING-AFFINITIVE POLY-α-OLEFINE. July 63, 26p.
Order from SA $31.00 SA Code-P-102

Trans. of [published] Japanese patent 9766/1962, cl. 42-D-21 (25-H-311), appl. no. 11870/1961, 6 Apr 61, pub. 31 July 62 (assertion of priority: 11 Aug 60, U.S.A.) by Eastman Kodak Co., U.S.A.

DESCRIPTORS: *Fibers (Synthetic), *Polyethylene plastics, Manufacturing methods, Dyes, *Butenes, *Pentenes, *Styrenes, *Cyclohexanes, *Cyclopentanes, *Hexanes, *Terpenes, *Camphanes, *Octenes, *Heptenes, Copolymerization, *Acrylic resins, Vinyl radicals, *Pyridines, *Acrylamides.

Harasawa, Kenji.
PURIFICATION OF PHTHALIC ANHYDRIDE. 3 July 63, 4p.
Order from SA $16.00 SA Code-P64

Trans. of published Japanese patent 10,318/1962, cl. 16-C-61 (16-C-619) appl. no. 29625/1958, 16 Oct 58, pub. 6 Aug 62, by Toyo Gosei-Kagaku Kogyo Co. Ltd.

DESCRIPTORS: *Phthalic anhydride, Purification, Distillation, Sublimation, Adsorbents, Nickel compounds, Magnesium compounds, Oxides, *Towers (Chemistry), Naphthalenes, Vanadium catalysts, *Fibers (Synthetic).

Kharitonov, V. M., Smirnova, G. L. and others.
METHOD OF REMOVING POLYAMIDE RESIN FROM SPINNERETS. 10 Apr 62, 3p. [Trans] T. 1359; [DSIR] NLL M 8928.
Order from OTS or SLA $1.10 63-15179

Trans. of Khim[icheskie] Volokna (USSR) 1961, no. 6, p. 58-59.

DESCRIPTORS: Textile industry, Industrial equipment, Machines, *Cleaning, Economics, *Reagents, Polyamide plastics.

Investigations carried out with various reagents showed that the most efficient removal of polyamide from the spinnerets is attained in molten alkali (KOH or NaOH) at 450°C. After this form of cleaning had been established in principle, the following factors were examined: The time necessary for complete removal of the polyamide from the spinneret, and change in weight of the spinneret after repeated treatment with the alkali. (Author)

Kobayashi, Yuji, Fukuma, Noboru, and Kitaoka, Atsushi.
A POLYMER COMPOSITION. 5 July 63, 5p.
Order from SA $16.00 SA Code-P82

Trans. of published Japanese patent 8478/1962, cl. 25-H-311 (25-H-05) (25-A-13) appl. no. 44,005/1960, 7 Nov 60, pub. 17 July 62, by Asahi Kasei Kogyo Co.

DESCRIPTORS: *Fibers (Synthetic), *Polyethylene plastics, *Propenes, Stabilization, Metalorganic compounds, *Tin compounds, Thio radicals, Glycols.

Nechaev, N. V. and Yakovlev, I. K.
MODERNIZATION OF THE COMBS (Modernizatsiya Grebnechesal'nykh Mashin) tr. by B. Ribush. [1962] [8]p. (foreign text included). [CSIRO] Trans. no. 5869.
Order from OTS or SLA $1.10 63-15263

Trans. of [Tekstil'naya Promyshlennost'] (USSR) 1961, v. 21, no. 7, p. 22-25.

DESCRIPTORS: Fibers, *Machines, *Textile industry.

Petukhov, B. V. and Pakshver, A. B.
IMPROVING THE HYDROPHILIC PROPERTIES OF KAPRON FIBRE BY HYDROOXYETHYLATION. 4 June 62, 5p. 3 refs. [Trans] T. 1402; [DSIR] NLL M. 8885.
Order from OTS or SLA $1.10 63-15201

Trans. of #Kolloidnyi Zhurnal (USSR) 1956, v. 18, no. 6, p. 741-744.

DESCRIPTORS: *Fibers (Synthetic), Physical properties, Moisture, Sorption, Hydroxides, Ethyl radicals, Polyamide plastics.

The hydroxyethylation of Kapron fibres results in a considerable improvement in their hydrophilic properties, rate of water vapour sorption, softness and dyeability. Undyed, hydroxyethylated Kapron fibres are obtained by conducting the reaction in a mixture of methyl alcohol and ethylene oxide; the addition of methyl alcohol accelerates the hydroxyethylation. (Author)

Rafikov, S. F., Chelnokova, G. N., and Gribkova, P. N.
CHEMICAL CONVERSIONS OF POLYMERS. II POLYOXYETHYLATION OF POLYAMIDES. 8 May 62, 12p. 10 refs. [Trans] T. 1392; [DSIR] NLL M 8887.
Order from OTS or SLA $1.60 63-15197

Trans. of Vysokomolekulyarnye Soedineniya (USSR) 1959, v. 1, no. 3, p. 378-386.

DESCRIPTORS: Polymers, *Polyamide plastics, *Fibers (Synthetic), *Ethylene oxide, Chemical reactions, Physical properties, Moisture.

The polyoxyethylation of polyamides was studied by reacting ethylene oxide with Kapron films and powders, Kapron fibres of varying degrees of orientation, Anide fibres, fibres prepared from the polyamide of thiodivaleric acid, the hexamethylene diamine with varying

degrees of orientation and films made from the polyamide Anid G-669. The topochemical polyoxyethylation reaction of polyamides proceeds not only on the surface but also in the interior of the film, filaments and powders. The polyoxyethylation of polyamides may be accompanied by cross-linking of the macromolecules to form complex ester bonds owing to the hydroxyl groups of the side-chains and the carboxyl end-groups. The swelling capacity in water of polyoxyethylated Kapron films is many times greater than that of the original films. The specimens of polyoxyethylated Kapron were readily soluble in alcohol, and samples of the copolyamide Anid G-669 were soluble in water. (Author)

Saito, Kei, Irie, Nori, and Sato, Motonobu.
A METHOD FOR THE PRODUCTION OF DYEABLE POLYOLEFIN FIBER. July 63, 8p.
Order from SA $16.00 SA Code-P-105

Trans. of [published] Japanese patent 10865/1962, cl. 42-D-21 (25-H-311), appl. no. 32607/1960, 27 July 60, pub. 11 Aug 62, by Kureha-Kasei Co., Ltd.

DESCRIPTORS: *Fibers (Synthetic), *Polyethylene plastics, Production, *Dyes, *Propenes, *Acrylic resins, Mixtures, Phenols, Phosgene, Phenyl radicals, Carbonates, Butanes, Polymerization.

Tsunawaki, Shigemitsu, Kazama, Kiyoji, and Ichikawa, Yataro.
METHOD OF MANUFACTURING POLYESTER. 3 July 63, 7p.
Order from SA $19.00 SA Code-P71

Trans. of published Japanese patent 6747/1962, cl. 26-D-6, appl. no. 35,066/1959, 7 Nov 59, pub. 2 July 62, by Teikoku Jinzo-kenshi Co., Ltd.

DESCRIPTORS: *Fibers (Synthetic), *Polyester plastics, Manufacturing methods, *Benzoates, Alkoxy radicals, *Phthalic acids, Butenes, Methyl radicals, Phthalic anhydride, Glycols, Ethylenes, Carboxylic acids, Phenyl radicals, Phosphites, Sulfones, Naphthalenes, Zinc compounds, Calcium compounds, Manganese compounds, Lead compounds, Acetates, Antimony compounds, Oxides.

Paints and Finishes

Dolgopol'skaya, M. A., Gurevich, E S. and others.
ON THE MODE OF ACTION OF ANTI-FOULING PAINTS (K Voprosu o Mekhanisme Deistviya Neobrastayuschikh Krasok). Apr 63 [13]p. 6 refs. RTS-2234.
Order from OTS or SLA $1.60 63-19135

Trans. of A[kademiya] N[auk] SSSR. Sevastopol'skaya Biologicheskaya Stantsiya. Trudy, 1959, v. 11, p. 254-261.

DESCRIPTORS: *Antifouling coatings, *Copper, Copper compounds, Sulfates, Sea water, Poisoning, Toxicity, *Barnacles, *Pelecypoda, Spectrophotometers, *Marine biology, *Paints.

The method of spectroscopic analysis was used for quantitative study of the diffusion of copper from antifouling paints into the surrounding water, and the penetration of copper into the fouling organisms growing on the painted surfaces. The results show that marine fouling organisms can accumulate in their tissues copper from the paint covering of the surface on which they have settled. The copper content of the tissues is greater than that of the water surrounding the organisms, and depends on the concentration of copper in the water and the duration of exposure. Copper passing into solution from the paint, or already in solution, reaches all the organs of the barnacle, including the shell, but its greatest concentration occurs in the digestive tract. Fouling organisms which settle on protected surfaces may become poisoned even when the concentration of toxic ions being given off is insufficient to have a directly lethal effect. The occurrence of poisoning then depends on the rate of diffusion of ions from the paint, the rate of their penetration into the tissues, and the tendency of the particular organism to accumulate the toxic substance in its body. (Author)

Epik, O. P.
FIRST SEMINAR AT THE DEPARTMENT OF TECHNICAL SCIENCES OF THE ACADEMY OF SCIENCES UKRSSR ON SURFACE DIFFUSION SATURATION OF METALS AND COATINGS OF HIGH MELTING COMPOUNDS ON METALLIC AND NONMETALLIC MATERIALS. 25 Mar 63 [8]p. FTD-TT-62-1926. AD-402 459.
Order from OTS or SLA $1.10 63-19306

Unedited rough draft trans. of Akademiya Nauk URSR [Kiev]. Dopovidi, 1962, no. 6, p. 837-839.

DESCRIPTORS: *Conferences, Metals, Materials, *Protective coverings, *Coatings, Production, Theory, Diffusion, Thermochemistry, *Metal coatings, Alloys, Gases, Absorption, Phase studies, *Heat resistant materials, Refractory coatings.

Vermorken, A. M.
USE OF CHLOROWAX 70 IN PAINTS AND ENAMELS. [1963] 9p.
Order from SLA $1.10 63-14192

Trans. of la Chimie des Peintures (Belgium) 1953, v. 16, p. 69-74.

DESCRIPTORS: *Paints, *Chlorine compounds, *Waxes, Fire-resistant coatings, Ceramic coatings Films, Binders.

Photographic Materials

MATERIAL SENSITIVE TO IONIZING RADIATIONS, INSENSITIVE TO VISIBLE LIGHT AND METHOD FOR ITS PREPARATION. [1962] 14p.
Order from OTS or SLA $1.60 63-10870

Trans. of German patent 1,135,755, appl. 29 Feb 60, issued 30 Aug 62.

DESCRIPTORS: *Materials, Sensitivity, Gamma rays, X-rays, *Radiographic film, Organic solvents, Halogen compounds, Binders, Dyes, Photographic images.

NEW PHOTOCONDUCTOGRAPHIC PROCESS. [1962] 7p.
Order from OTS or SLA $1.10 63-10873

Trans. of Belgian patent 617,026, by Kodak S.A., issued 27 Apr 62 (USA priority 1 May 61).

DESCRIPTORS: *Photography, *Photoconductivity, Zinc compounds, Oxides, *Electrodeposition, Photographic images, Binders, Photographic chemicals, Electrophotography

NEW PHOTOSENSITIVE PRODUCT FOR PHOTOGRAVURE. [1962] 5p.
Order from OTS or SLA $1.10 63-10874

Trans. of French patent 1,282,219, appl. 16 Dec 60, issued 11 Dec 61, by Kodak-Pathé (USA priority 18 Dec 59, 860,399).

DESCRIPTORS: *Photoengraving, *Photosensitivity, Materials, *Photographic chemicals.

The present invention relates to a photosensitive product useful in the preparation of photogravure resists and comprises a temporary support with stable dimensions which can be easily peeled without the aid of an organic solvent.

NEW THERMOXEROGRAPHIC RECORDING. [1962] 11p. (figs. omitted).
Order from OTS or SLA $1.60 63-10875

Trans. of Belgian patent 615,435, by Kodak S.A., issued 22 Mar 62 (USA priority 24 Mar 61).

DESCRIPTORS: *Electrophotography, Photographic images, Thermoelectricity, Electrostatics.

PHOTOCHEMICAL COMPOSITIONS. [1962] 5p. (figs. omitted).
Order from OTS or SLA $1.10 63-10881

Trans. of Belgian patent 565,270, appl. filed 28 Feb 58, issued 15 Mar 58, by Radio Corp. of America, New York (appl. in the USA, Mar 57, by E. C. Giaimo, Jr.).

DESCRIPTORS: *Photography, *Photoelectric materials, *Photoengraving, Photosensitivity, Photographic images, Photoconductivity, Photochemistry.

RESEARCH AND INDUSTRY, 26 JULY 62: PHOTORAMA 62. [1962] 6p.
Order from SLA $1.10 62-20486

Trans. of 3 lectures given at the Photographic Symposium held by CIBA and Tellko, Zurich, June 62.

DESCRIPTORS: *Photography, *Color photography, *Photochemistry, Color film, Photographic chemicals, Diffusion, Scientific research.

Contents:
Introduction by P. Boettcher
The chromogenic developing process (lecture) by W. Schneider and W. Deuschel
"Silberfarbbleich" and Telcolux process (lecture) by C. Rossi
Photochemistry (lecture) by B. Messikommer.

Cranz, C. and Scharun, H.
MOTION PICTURE PHOTOGRAPHY ON STATIONARY FILM, AND WITH EXTREMELY HIGH PICTURE FREQUENCY. [1963] [36]p. 1 ref.
Order from SLA $3.60 63-14906

Trans. of Zeitschrift fllr Physik (Germany) 1929, v. 56, p. 147-[174].

DESCRIPTORS: Motion picture photography, *High speed photography, High speed cameras, Photographic film.

Levinson, I. B. and Plavina, I. Z.
THE MECHANISM UNDERLYING THE FORMATION OF LATENT ELECTROPHOTOGRAPHIC IMAGES IN ZINC OXIDE LAYERS (O Mekhanizme Obrazovaniya Skrytogo Elektrofotograficheskogo Izovrazheniya v Sloyakh iz Okisi Tsinka). [1962] [8]p. (foreign text included) 6 refs.
Order from OTS or SLA $1.10 62-20019

Trans. of Akademiya Nauk SSSR. Doklady, 1962, v. 143, no. 4, p. 822-824.

DESCRIPTORS: *Photographic images, Electrical double layer, Surface properties, Ions, *Zinc compounds, *Oxides, *Electrophotography, Semiconductors.

Matejac, R.
DISARRANGEMENT IN THE SILVER HALIDES [PT. 1] 28 Feb 63, 20p.
Order from SLA $1.60 63-14096

Trans. of Photographische Korrespondez (Austria) 1957, v. 93, no. 2, p. 17-25.

DESCRIPTORS: *Silver compounds, *Halides, *Structural properties, *Photographic emulsions, Crystal structure, Diffusion, Electrical conductance, Photographic chemicals.

This is a survey of the characteristic signs of disarrangement in the silver halide crystals.

Mauge.
STUDY AND MEASUREMENT OF HALATION. [1962] 8p. (figs. refs. omitted).
Order from SLA $1.10 63-10891

Trans. of Soc[iété] Française de Photog[raphie et de Cinématographie]. Bull[etin] 1927 [ser. 3] v. 14 [no. 1, p. 12-30].

DESCRIPTORS: Photographic emulsions, *Photographic images, Distortion, *Halation, Light, Diffusion, Reflection, Protective coverings.

Waidelich, Wilhelm.
THE QUESTION OF A AgBr STRUCTURAL CHANGE IN THE FORMATION OF THE LATENT IMAGE. 7 Mar 63, 13p. 14 refs.
Order from SLA $1.60 63-14054

Trans. of Zeitschrift für Physik (West Germany) 1956, v. 146, p. 505-514.

DESCRIPTORS: *Photographic images, *Silver compounds, *Bromides, Crystal lattices, *Photographic chemicals, Photographic film, X-ray photography, Photography, Photographic emulsions

In the present work, a search is made with monochromatic X rays for signs of a B 3 structure in Debye-Scherrer diagrams. Photographic films that were moved along through the primary beam to avoid greater exposure to the X rays during the Debye exposures were used as the sample. In each case, photographs were made of the same material in the unexposed condition as well as after increasing light and X-ray exposures. Even with sensitive photometric evaluation, no signs of a B 3 structure of the silver bromide were found. Any possible B 3 regions occurring must have had a more limited extent than about 3 to 5 lattice plane distances. (Author)

Wainer, Eugene.
PREPARATION OF MIXTURE SUITABLE FOR LIGHT-SENSITIVE MATERIALS. [1962] 15p. (tables omitted).
Order from OTS or SLA $1.60 63-10263

Trans. of German patent 1,134,587, H 38391 IX a/57 b, internat. cl. G 03 c, filed 15 Jan 60, appl. pub. 9 Aug 62, by Horizons, Cleveland (USA) (priority: U. S., 16 Jan 59, 787,112).

DESCRIPTORS: Preparation, Light, Sensitivity, Materials, *Photographic images, Plastics, Amines, Dyes, Halogen compounds, *Photographic chemicals.

Went, Rudolf.
MEANS OF PRODUCING POSITIVES WITH FIDELTY UNDER ACTION OF HEAT. [1962] 5p.
Order from OTS or SLA $1.10 63-10869

Trans of Japan patent publication 62-12627, application 60-1239, 19 Jan 60, pub. 1 Sep 62.

DESCRIPTORS: *Photographic emulsions, *Photographic images, *Silver compounds, Photographic chemicals, Heat treatment.

The present invention relates to a method and means of producing a positive with fidelty by employing a photosilver halogenide negative emulsion layer containing a developer and after exposure to light placing a positive layer in contact with the negative emulsion layer, by applying heat thereto. This invention also relates to unique finishing processes of the positive layer. (Author)

Plastics

FIRE RESISTANT POLYURETHANE FOAMS. [1963] 18p.
Order from OTS or SLA $1.60 63-14355

Trans. of Belg[ian] pat[ent] 606,447, main pat. PV 478,371, filed 9 Mar 61 (U. S. application 45,299, 26 July 60, by W. M. Lanham to Union Carbide).

DESCRIPTORS: *Foams, *Isocyanate plastics, Flammability, *Expanded plastics.

The invention is based on the discovery that flameproofing additives consisting vinyl halide resins and antimony oxide are very efficient flame-resistors for cellular polyurethane foams made from polyether-isocyanate systems in which the polyether is an acyclic or alicyclic derivative. It has been found that when small amounts of vinyl halide resin and antimony oxide are incorporated in the above polyether-isocyanates and the mixture then subjected to a foaming step, using the semi-prepolymer or prepolymer technique, that flame-resistant polyurethane foams are obtained which have a high degree of flame-resistence with little loss of desirabele physical properties. Manufacture of urethane products which are either self-extinguishing or non-combustible in the ASTM D-1692 test, is greatly simplified and their scope of application considerably enlarged. (Author)

PIGMENTATION OF EPOXY RESINS. May 63, 1000 words.
Order from TTIS $9.00 TTIS 8016

Trans. of Industria della Vernice (Italy) 1962, v. 16, p. 105-107.

DESCRIPTORS: *Epoxy plastics, Pigments.

PROCEDURE FOR THE PREPARATION OF A LOW DENSITY EPOXY RESIN COMPOSITION. [1962] 6p.
Order from OTS or SLA $1.10 63-10887

Trans. of French patent 1,300,500, by Thiokol Chemical Corp., appl. 14 Sep 61, issued 25 June 62 (USA priority: 14 Oct 60, 62 565).

DESCRIPTORS: *Epoxy plastics, Mixtures, Liquids, *Porous materials, Manufacturing methods.

Bier, G. and Krämer, H.
POLYMERIZATION OF VINYL CHLORIDE AND STRUCTURE OF POLYVINYL CHLORIDE. [1963] 9p. (tables figs. omitted) 20 refs.
Order from SLA $1.10 63-14170

Partial trans. (p. 498-501, 503-505 (excerpts) of Kunststoffe (West Germany) 1956, v. 46, no. 11, p. 498-505.
A trans. of section on Reduction PVC (p. 504-505) is available from SLA $1.10 as 63-14176 [1963] 3p.

DESCRIPTORS: *Polyvinyl chloride, Molecular structure, *Vinyl chlorides, Polymerization, Vinyl radicals, Acetates, Osmotic pressure, Titration, *Polyethylene plastics, *Heat-resistant plastics.

Contents:
End groups
End groups proceeding from additives
Comparison polyvinyl chloride--polyvinyl acetate
Osmotic measurements of PVC fractions
Clouding measurements
Influence of mixed polymerization components
New heat resistant polyethylene.

Bier, G. and Krämer, H.
VINYL CHLORIDE POLYMERIZATION AND PVC STRUCTURE: REDUCTION OF PVC [AND] OUTLOOK. [1963] 3p. 9 refs.
Order from SLA $1.10 63-14176

Partial trans. (p. 504-505 excerpts) of Kunststoffe (West Germany) 1956, v. 46, no. 11, p. [498]-505. Trans. of p. 498-501, 503-505 (excerpts) is available from SLA $1.10 as 63-14170 [1963] 9p.

DESCRIPTORS: *Polyvinyl chloride, Polymerization, Molecular structure, Reduction (Chemistry), Polyethylene plastics, Methyl radicals, Infrared spectroscopy.

Bier, G., Gumboldt, A., and Schleitzer, G.
THE ACTION OF VARIOUS ZIEGLER CATALYSTS IN THE POLYMERIZATION OF α-OLEFINS AND PROPERTIES OF THE POLYMERS. [1963] [19]p. 19 refs.
Order from SLA $1.60 63-14417

Trans. of Makromolekulare Chemie (Switzerland) 1962, v. 58, Dec, p. 43-64.

DESCRIPTORS: *Ziegler catalysts, *Metalorganic compounds, *Aluminum compounds, *Titanium compounds, *Vanadium compounds, *Polyethylene plastics, Ethylenes, Propenes, Polymerization, Copolymerization, *Block polymers.

Ziegler type catalysts such as $TiCl_3$ + AlR_2Cl (a) and VCl_4 + AlR_2Cl (b) show very different behaviour in the polymerization and copolymerization of α-olefins. (a) has a long lifetime with relatively long growing time of polymer chains at not too high temperatures, (b) has a short lifetime with growing time of molecules at the most of some minutes. (a) gives less uniform polymers and copolymers than (b). for the preparation of stereoregular poly-α-olefins and of blockpolymers (a) is especially suitable. On the other hand (b) is particularly suitable for the preparation of copolymers of chemical uniformity. (Author)

Brügel, W.
USE OF NUCLEAR-RESONANCE SPECTROSCOPY ON HIGH MOLECULAR SUBSTANCES. [1963] 2p. (figs. omitted) 7 refs.
Order from SLA $1.10 63-14169

Trans. of Kunststoffe (West Germany) 1956, v. 46, no. 8, p. 369-370.

DESCRIPTORS: *Nuclear spectroscopy, *Polymers, plastics, Nuclear resonance.

Bryl, Heinz and Ziegler, Karl.
METHOD OF MANUFACTURING HIGH MOLECULAR POLYETHYLENE. 3 July 63, 11p. 3 refs.
Order from SA $19.00 SA Code-P67

Trans. of published Japanese patent 1546/1957, cl 26-B-11, appl. no. 2867/1955, 19 Jan 55, pub. 7 Mar 57 (Priority: Germany, 19 Jan 54) by Karl Ziegler.

DESCRIPTORS: *Polyethylene plastics, Manufacturing methods, *Ziegler catalysts, *Magnesium compounds, *Zinc compounds, Methyl radicals, Ethyl radicals, Butyl radicals, Propyl radicals, Halides, Titanium compounds, Zirconium compounds, Chromium compounds, Thorium compounds, Uranium compounds, Metalorganic compounds.

Edmond, James Thomas, Lions, Harold Dwight, and Norline, Jane.
METHOD OF POLYMERIZING 1-OLEFINE. July 63, 14p.
Order from SA $22.00 SA Code-P-80

Trans. of [published] Japanese patent 10183/1959, cl. 26-B-11 (13-F-1) filed 17 Aug 56, appl. 21398/1956, pub. 11 Nov 59 (priority date: 22 Aug 55, U. S. A.) by Phillips Petroleum Co., Oklahoma.

DESCRIPTORS: *Polyethylene plastics, Ethylenes, Polymerization, *Ziegler catalysts, Metalorganic compounds, *Titanium compounds, Alkoxy radicals, Propyl radicals, Ethyl radicals, Amines, Acetates, Malonic acids, Oxalates, Lithium compounds, Potassium compounds, Cesium compounds, Rubidium compounds, *Aluminum compounds, Gallium compounds, Indium compounds, Thallium compounds, Hydrides, Halides.

Harowitz, C. L.
POLYMERS. [1963] 29p.
Order from OTS or SLA $2.60 63-14353

Trans. of Belg[ian] pat[ent] 598,678, pub. 14 Apr 61, by Virginia Carolina Chem.

DESCRIPTORS: *Polymers, *Expanded plastics, Foams, *Flame arresters, *Isocyanate plastics, Urethanes, Production, Cyanates, Alcohols, *Phosphorus compounds, Synthesis (Chemistry), Phosphoric acids, Butyl radicals, Oxides, Propenes.

The object of the invention is urethane polymers having improved flameproofing and self-extinguishing properties. A particular object is cellular polyurethanes

with improved flame-proofing and self-extinguishing properties. A more particular object is solid, cellular polyurethanes having these properties. (Author)

Hoshi, Yuji and Kaneko, Akira.
POLYVINYL CHLORIDE COMPOSITION-PRODUCT. 6 July 63, 11p.
Order from SA $19.00 SA Code-P100

Trans. of published Japanese patent 14,220/1962, cl. 25-H-351.1 (25-H-511) appl. no. 48,795/1960, 16 Dec 60, pub. 17 Sep 62, by Kureha Kasei Co., Ltd.

DESCRIPTORS: *Polyvinyl chloride, *Acrylic resins, Shock resistance, Vinyl chlorides, Vinyl radicals, Acetates, Acrylic acids, Copolymerization.

Hüttel, R.
ETHYLENEIMINE POLYESTER RESINS. [1963] 6p. (tables equations omitted).
Order from SLA $1.10 63-14416

Trans. of Fette Seifen Anstrichmittel (West Germany) 1962, v. 64, no. 2, p. 107-110.

DESCRIPTORS: *Polyester plastics, *Ethyleneimines, Succinates, Polymerization, Hardening, Alcohols, Carboxylic acids, Physical properties, Tensile properties, Hardness, Chemical properties.

Imai, Kiyokazu.
METHOD OF POLYMERIZING VINYL ACETATE. July 63, 5p.
Order from SA $16.00 SA Code-P-59

Trans. of [published] Japanese patent 3140/1962, cl. 26-B-131, appl. no. 25285/1960, 25 May 60, pub. 31 May 62, by Kurashiki Rayon Co., Ltd.

DESCRIPTORS: *Vinyl plastics, *Polyvinyl alcohol, Production, Vinyl radicals, *Acetates, Polymerization, Solvents, Methanols, Catalysts, *Boric acids, Azo radicals, Butyl radicals, Nitriles.

Imoto, Riichiro, Kosaka, Yujiro, and Shimizu, Akihike.
METHOD OF MANUFACTURING ANION-EXCHANGE MEMBRANE. 6 July 63, 10p.
Order from SA $19.00 SA Code-P97

Trans. of published Japanese patent 13,791/1962, cl. 26-B-11 (13-C-131.1) (26-B-1) appl. no. 8649/1960, 15 Mar 60, pub. 12 Sep 62, by Toyo Soda Kogyo Co., Ltd.

DESCRIPTORS: *Ion exchange resins, *Membranes, Manufacturing methods, *Graft polymers, *Vinyl plastics, *Pyridine derivatives, *Polyethylene plastics, Styrenes, Butadienes, Catalysts, Peroxides, Electrical properties, Transport properties.

Ishida, Shinichi.
METHOD OF POLYMERIZING ALIPHATIC ALDEHYDES. 5 July 63, 7p.
Order from SA $16.00 SA Code-P86

Trans. of published Japanese patent 10,595/1962, cl. 26-C-118, appl. no. 22,103/1960, 26 Apr 60, pub. 8 Aug 62, by Asahi Kasei Kogyo Co., Ltd.

DESCRIPTORS: *Acetyl plastics, Production, *Aldehydes, *Acetaldehydes, Polymerization, Catalysts, Metalorganic compounds, *Ziegler catalysts, Group II elements, *Zinc compounds, *Magnesium compounds, Calcium compounds, Ethyl radicals, Aluminum compounds, Oxides, Solvents, Ethers.

Kamiyama, Mamoru and Kawamatsu, Toshiji.
METHOD OF PROCESSING POLYETHYLENE. July 63, 6p.
Order from SA $16.00 SA Code-P-107

Trans. of [published] Japanese patent 13860/1962, cl. 25-H-311 (136-G-22), filed 21 May 60, appl. 25247/1960, pub. 30 Sep 62, by Hitachi Manufacturing Co., Ltd.

DESCRIPTORS: *Polyethylene plastics, Processing, Ethylenes, *Propenes, Mixtures, Copolymerization, *Radiation chemistry

Kern, W. and Schulz, R. C.
[SYNTHETIC MACROMOLECULAR MATERIALS WITH REACTIVE GROUPS]: SUMMARY. [1963] 2p.
Order from SLA $1.10 63-14200

Partial trans. (p. 170-171) of Angewandte Chemie (West Germany) 1957 [v. 69] no. 5, p. [153]-171.

DESCRIPTORS: *Acrylic resins, *Vinyl plastics, Synthesis (Chemistry), Chemical properties, Hydrazine derivatives, Hydroxamic acids, Amides, Acroleins, Sulfonic acids.

Kludt, Karl Gustav, Grav, Roderich and others.
METHOD OF POLYMERIZING ETHYLENE AND ITS HOMOLOGUES. July 63, 9p.
Order from SA $19.00 SA Code-P-76

Trans. of [published] Japanese patent 89/1959, cl. 26-B-11, filed 4 Apr 56, appl. 9023/1956 (priority date 6 Apr 55, Germany) pub. 17 Jan 59, by Farbwerke Hoechst Aktiengesellschaft.

DESCRIPTORS: *Polyethylene plastics, Ethylenes, *Propenes, Polymerization, Metalorganic compounds, *Ziegler catalysts, *Titanium compounds, Chlorides, *Aluminum compounds, Ethyl radicals.

Kobayashi, Yuji, Fukuma, Noboru, and Kitaoka, Atsushi.
A POLYMER COMPOSITION. 5 July 63, 6p.
Order from SA $16.00 SA Code-P84

Trans. of published Japanese patent 8178/1962, cl. 25-H-311 (25-H-05) (25-A-13) appl. no. 35,376/1960, 23 Aug 60, pub. 13 July 62, by Asahi Kasei Kogyo Co.

DESCRIPTORS: *Fibers (Synthetic), *Plastic films, *Polyethylene plastics, *Propenes, Stabilization, Metalorganic compounds, *Tin compounds, Ethyl radicals, Benzyl radicals, Chlorides, Thio radicals, Glycols.

Kobayashi, Yuji, Fukuma, Noboru, and Kitaoka, Atsushi.
A POLYMER COMPOSITION. July 63, 5p.
Order from SA $16.00 SA Code-P-52

Trans. of [published] Japanese patent 8479/1962, cl. 25-H-311 (25-H-05) (25-A-13) appl. no. 44006/1960 pub. 17 July 62, by Asahi-Kasei-Kogyo Co.

DESCRIPTORS: *Polyethylene plastics, Ethylenes, Propenes, Stabilization, Metalorganic compounds, *Tin compounds, Furfural alcohols, Thio radicals, Glycols.

Kovacs, Andre.
KINETICS OF PARTIAL CRYSTALLIZATION OF PVC. [1963] 3p. (figs. omitted) 8 refs.
Order from SLA $1.10 63-14143

Trans. of [Academie des Sciences, Paris]. Comptes Rendus (France) 1956, v. 243, 3 July, p. 50-53 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Polyvinyl chloride, *Crystallization, Stereochemistry, Transition temperature, Reaction kinetics.

It is demonstrated that PVC is not in metastable equilibrium above its vitreous transition temperature, and the kinetic of the growth of density due to molecular re-arrangement is studied. (Author)

Mac Nail, Hary Daniel, Jr.
METHOD OF MANUFACTURING POLYESTER. July 63, 13p.
Order from SA $22.00 SA Code-P-79

Trans of [published] Japanese patent 11248/1962, cl. 26-D-6 (13-H-13) filed 27 Aug 60, appl. 36056/1960, pub. 16 Aug 62, by Hercules Powder Co., Delaware.

DESCRIPTORS: *Polyester plastics, Ethylenes, *Glycols, Methyl radicals, *Phthalates, Exchange reactions, Polymerization, Catalysts, Cadmium compounds, Lead compounds, Tin compounds, Magnesium compounds, Manganese compounds, *Antimonates.

Machida, Kazuo, Takahashi, Kimihei and others.
METHOD OF MANUFACTURING HIGH POLYMERS OF ETHYLENE AND ETHYLENE-PROPYLENE. July 63, 10p.
Order from SA $19.00 SA Code-P-78

Trans. of [published] Japanese patent 14643/1961, cl. 26-B-11, filed 23 Aug 58, appl. 36533/1960 (divided from appl. 23969/1958) pub. 29 Aug 61, by Tokuyama Soda Co., Ltd.

DESCRIPTORS: *Polyethylene plastics, Ethylenes, *Propenes, Polymerization, Copolymerization, Catalysts, *Titanium compounds, *Vanadium compounds, Chlorides, *Sodium, Solvents, Toluenes, Xylenes.

Morimoto, Saichi: Hayashibe, Yoshihiko, and Fujimura, Toshiaki.
METHOD OF IMPROVING THE PROPERTY OF POLYPROPYLENE POLYMER MOLDINGS. July 63, 5p.
Order from SA $16.00 SA Code-P-74

Trans. of [published] Japanese patent 8830/1962, cl. 25-N-231 (26-B-11) (48-B-02) (26-B-151) (26-B-022) (42-D-21) filed 7 Dec 60, appl. 48452/1960, pub. 20 July 62, by Toyo Boseki Co., Ltd.

DESCRIPTORS: *Fibers(Synthetic), *Plastic films, *Polyethylene plastics, *Styrene plastics, *Acrylic resins, Vinyl radicals, *Sulfonic acids, Copolymerization, *Dyes, Finishes.

Morimoto, Saichi, Hayashibe, Yoshihiko and others.
METHOD OF IMPROVING THE QUALITY OF POLY-α-OLEFINE MOLDINGS. 3 July 63, 6p.
Order from SA $16.00 SA Code-P69

Trans. of published Japanese patent 8831/1962, cl. 25-N-231 (26-B-11) (48-B-02) (26-B-151) (26-B-022) (42-D-21) appl. no. 51,323/1960, 28 Dec 60, pub. 20 July 62, by Toyo Boseki Co., Ltd.

DESCRIPTORS: *Molding materials, *Graft polymers, *Polyethylene plastics, *Fibers (Synthetic), *Plastic films, Manufacturing methods, *Propenes, *Acrylic acid esters, Methyl radicals, Heat treatment, Alcohols, Methanols, Glycols, *Dyes, Finishes.

Morimoto, Saichi, Yoshimura, Shohei, and Hayashibe, Yoshihiko.
METHOD OF IMPROVING THE QUALITY OF POLY-α-OLEFINE MOLDINGS. 3 July 63, 6p.
Order from SA $16.00 SA Code-P68

Trans. of published Japanese patent 8832/1962, cl. 25-N-231 (26-B-11) (48-B-02) (26-B-151) (26-B-022) (42-D-21) appl. no. 51324/1960, 28 Dec 60, pub. 20 July 62, by Toyo Boseki Co., Ltd.

DESCRIPTORS: *Molding materials, *Polyethylene plastics, *Fibers(Synthetic), *Plastic films, Manufacturing methods, *Propenes, Vinyl radicals, Carboxylic acids, *Acrylic acids, Halocarbons, Ammonium compounds, Methyl radicals, Chlorides, Halohydrins, Allyl radicals, Bromides, Sulfinic acids, *Dyes, *Graft polymers.

Nakanishi, Ryoji and Hayashi, Eiichi.
METHOD OF MANUFACTURING DENATURALIZED POLYESTER. 6 July 63, 4p.
Order from SA $16.00 SA Code-P96

Trans. of published Japanese patent 13,798/1962, cl. 26-D-6 (25-H-61) appl. no. 24,023/1960, 14 May 60, pub. 12 Sep 62, by Toyo Rayon Co., Ltd.

DESCRIPTORS: *Fibers (Synthetic), *Plastic films, *Polyester plastics, Manufacturing methods, *Phthalates, *Glycols, Ethylenes, Polymerization, Metalorganic compounds, *Potassium compounds, *Imides, *Dyes.

Nakano, Senji, Iwasaki, Keichiro and others.
METHOD OF MANUFACTURING VINYL-ETHER POLYMER. July 63, 6p.
Order from SA $16.00 SA Code-P-110

Trans. of [published] Japanese patent 13885/1962, cl. 26-B-131, filed 7 May 60, appl. 23075/1960, pub. 13 Sep 62, by Mitsubishi Kasei Kogyo Co., Ltd.

DESCRIPTORS: *Vinyl plastics, Manufacturing methods, Vinyl radicals, *Ethers, Butyl radicals, Propyl radicals, Polymerization, Catalysts, *Carbon tetrachloride, *Ziegler catalysts, *Magnesium compounds, *Aluminum compounds, Ethyl radicals, Bromides, Metalorganic compounds.

Nakano, Senju, Iwasaki, Koichiro and others.
A PROCESS OF MANUFACTURING VINYL ETHER POLYMERS. July 63, 9p.
Order from SA $16.00 SA Code-P-61

Trans. of [published] Japanese patent 15542/1961, cl. 26-B-131, appl. no. 26701/1959, 21 Aug 59, pub. 6 Sep 61, by Mitsubishi-Kasei-Kogyo Inc.

DESCRIPTORS: *Vinyl plastics, Manufacturing methods, Vinyl radicals, *Ethers, Polymerization, Metalorganic compounds, *Ziegler catalysts, *Magnesium compounds, Phenyl radicals, Benzyl radicals, Alkoxy radicals, Butyl radicals, Chlorides, Bromides.

Natta, G. and Danusso, F.
STEREOSPECIFIC POLYMERIZATION OF STYROL. I. INFORMATION AND PROBLEMS OF CRYSTALLINE POLYSTYROLS. [1963] [19]p. 21 refs.
Order from SLA $1.60 63-14693

Trans. of la Chimica e l'Industria (Italy) 1958, v. 40, no. 6, p. 445-450.
Another trans. is available from SLA mi$2.40, ph$3.30 as 59-17209 [1959] 14p.

DESCRIPTORS: *Styrene plastics, *Crystal structure, Styrenes, Polymerization, *Stereochemistry, *Ziegler catalysts.

For abstract see Technical Translations 2:483, 1959.

Newberg, Raymond George and Solvick, Lugner Sevene.
METHOD OF POLYMERIZING OLEFINE. 5 July 63 [21]p.
Order from SA $25.00 SA Code-P90

Trans. of published Japanese patent 7145/1962, cl. 26-B-11, appl. no. 32,163/1960, 22 July 60, pub. 4 July 62 (Priority: U.S.A., 22 July 59) by National Distillers & Chemical Corp., U.S.A.

DESCRIPTORS: *Polyethylene plastics, Production, Physical properties, Ethylenes, *Propenes, Polymerization, Metalorganic compounds, *Ziegler catalysts, Vanadium compounds, Titanium compounds, Silicon compounds, Chlorides, Aluminum compounds, Ethyl radicals, Solvents, *Cyclohexanes, Copolymerization.

Nishio, Minoru, Matsui, Junichi and others.
METHOD OF MANUFACTURING COLORED MOLDINGS OF POLYPROPYLENE. July 63, 4p.
Order from SA $16.00 SA Code-P-106

Trans. of [published] Japanese patent 13861/1963, cl. 25-H-311.2 (25-H-09), filed 28 July 60, appl. 32727/1960, pub. 13 Sep 62, by Toyo Rayon Co., Ltd.

DESCRIPTORS: *Fibers (Synthetic), *Plastic films, *Polyethylene plastics, Manufacturing methods, *Propenes, *Catalysts, Fatty acids, Salts, Group II elements, Copper compounds, Aluminum compounds, Tin compounds, Lead compounds, *Dyes

Noro, Ken and Takita, Hiroshi.
METHOD OF POLYMERIZING VINYLACETATE AT LOW TEMPERATURE. 5 July 63, 6p.
Order from SA $16.00 SA Code-P87

Trans. of published Japanese patent 10,593/1962, cl. 26-B-131, appl. no. 38,522/1960, 20 Sep 60, pub. 8 Aug 62, by Nihon Goseikagaku Kogyo Co., Ltd.

DESCRIPTORS: *Polyvinyl alcohol, *Vinyl plastics, Production, Vinyl radicals, *Acetates, Polymerization, Butyl radicals, *Benzoates, *Ascorbic acids, Solvents, Methanols.

Okamura, Kazuo, Satokawa, Takaomi, and Yonetani, Minoru.
A PROCESS OF MANUFACTURING RAW MATERIALS FOR HEAT RESISTANT SHAPED ARTICLES. 5 July 63, 11p.
Order from SA $19.00 SA Code-P83

Trans. of published Japanese patent 3390/1961, cl. 26-B-141 (26-B-14) appl. no. 35,610/1958, 9 Dec 58, pub. 18 Apr 61, by Osaka Kinzoku Kogyo, Inc.

DESCRIPTORS: *Heat resistant plastics, *Polyvinyl chloride, *Polyethylene plastics, *Halocarbon plastics, *Fluorocarbons, Manufacturing methods, Vinyl chloride, Propenes, Fluorides, Copolymerization.

Okamura, Seizo and Higashimura, Toshinobu.
METHOD OF MANUFACTURING VINYL ETHER POLYMER. July 63 [6]p.
Order from SA $16.00 SA Code-P-72

Trans. of [published] Japanese patent 6739/1962, cl. 26-B-131, filed 20 Apr 60, appl. 21536/1960, pub. 2 July 62, by Mitsubishi Kasei Kogyo Co., Ltd.

DESCRIPTORS: *Vinyl plastics, Manufacturing methods, Vinyl radicals, *Ethers, Butyl radicals, Ethyl radicals, Polymerization, *Catalysts, Group II elements, Group IV elements, Group VIII elements, Sulfates, *Chromium catalysts, *Sulfuric acid.

Olson, Sesa Goodyear and Spualin, Harold Morton.
METHOD OF COPOLYMERIZATION. July 63, 12p.
Order from SA $19.00 SA Code-P-73

Trans. of [published] Japanese patent 15940/1961, cl. 26-B-11, filed 30 Sep 59, appl. 30630/1959 (priority claim: 2 Mar 59, U.S.A.) pub. 11 Sep 61, by Hercules Powder Co., Delaware.

DESCRIPTORS: *Polyethylene plastics, Production, Ethylenes, *Propenes, *Copolymerization, Metalorganic compounds, *Ziegler catalysts, *Vanadium compounds, Oxychlorides, *Aluminum compounds, Ethyl radicals, Chlorides.

Raum, Alerick Louis Jeffrey.
METHOD OF POLYMERIZATION. July 63, 13p. 5 refs.
Order from SA $19.00 SA Code-P-75

Trans. of [published] Japanese patent 1794/1961, cl. 26-B-11 (13-F-1), filed 18 Apr 57, appl. 9501/1957 (priority claim: 1 May 56, 7 May 56, 8 Apr 57, Britain) pub. 20 Mar 61, by The Distillers Co., Ltd.

DESCRIPTORS: *Polyethylene plastics, Ethylenes, *Propenes, Polymerization, Electric discharges, Metalorganic compounds, *Ziegler catalysts, *Titanium compounds, Chlorides, *Aluminum compounds, Methyl radicals, Ethyl radicals, Propyl radicals, Butyl radicals, Phenyl radicals, Zinc compounds, *Lithium compounds, Hydrides.

Roha, Max E., Beears, Warren L. and others.
SOLUBLE CATALYST SOLUTION. 3 July 63, 43p.
Order from SA $40.00 SA Code-P63

Trans. of published Japanese patent 3772/1960, cl 13-F-1 (26-B-1) (26-B-11) (26-B-2) appl. no. 958/1957, 18 Jan 57, pub. 16 Apr 60 (Priority: USA, 18 Jan 56) by Goodrich-Gulf-Chemicals, Inc. U. S. A.

DESCRIPTORS: *Catalysts, Solutions, *Ziegler catalysts, Synthesis (Chemistry), *Metalorganic compounds, *Aluminum compounds, *Tin compounds, Halides, Hydrides, Butyl radicals, *Titanium compounds, Manufacturing methods, *Polyethylene plastics, Polymerization.

Saito, Toshio and Nishio, Masao.
AFTER-TREATMENT OF POLYETHYLENE POLYMER PRODUCT OF ZIEGLER PROCESS. July 63, 9p. 1 ref.
Order from SA $19.00 SA Code-P-53

Trans. of [published] Japanese patent 8938/1961, cl. 26-B-11, appl. no. 19213/1957, 5 Aug 57, pub. 28 June 61, by Mitsui Chemical Industry, Inc.

DESCRIPTORS: *Polyethylene plastics, Processing, Ethylenes, Polymerization, *Ziegler catalysts, Separation, *Surface-active substances, Alcohols.

Saito, Toshio and Sato, Kazutoshi.
AFTER-TREATMENT OF ETHYLENE AND α-OLEFIN POLYMER PRODUCTS. July 63, 9p. 4 refs.
Order from SA $19.00 SA Code-P-55

Trans. of [published] Japanese patent 8595/1961, cl. 26-B-11, appl. no. 29515/1957, 30 Nov 57, pub. 24 June 61, by Mitsui Chemical Industry, Inc.

DESCRIPTORS: *Polyethylene plastics, Processing, Ethylenes, Propenes, Polymerization, *Ziegler catalysts, Separation, Solvents, *Alcohols, Methanols, Ethanols.

Sakakibara, Seizaburo, Aoki, Horishi, and Kuwahara, Michichika.
POLYOXYMETHYLENE COMPOSITION. 6 July 63, 10p.
Order from SA $16.00 SA Code-P-94

Trans. of published Japanese patent 8724/1962, cl. 25-H-712, appl. no. 10,491/1960, 31 Mar 60, pub. 19 July 62, by Teikoku Jinzokenshi Co., Ltd.

DESCRIPTORS: *Epoxy plastics, *Formaldehyde, *Methanes, Oxides, Acetates, Production, Halohydrins, Phenols, Sodium compounds, Sulfides, Oleic acids.

Sakakibara, Seizaburo, Aoki, Horishi, and Kuwahara, Michichika.
POLYOXYMETHYLENE COMPOSITION. 6 July 63, 9p.
Order from SA $16.00 SA Code-P95

Trans. of published Japanese patent 8723/1962, cl 25-H-712, appl. no. 10,490/1960, 31 Mar 60, pub. 19 July 62, by Teikoku Jinzokenshi Co., Ltd.

DESCRIPTORS: *Epoxy plastics, *Formaldehyde, *Methanes, Oxides, Acetates, Production, Halohydrins, Phenols, Hardening, *Amines, Methyl radicals, Phenyl radicals, Ethyleneamines.

Sakurada, Hiroshi.
A PROCESS FOR THE POLYMERIZATION OF α-METHYLSTYRENE. 3 July 63 [10]p.
Order from SA $16.00 SA Code-P66

Trans. of published Japanese patent 11,540/1962, cl. 26-B-121 (26-B-012) appl. no. 26659/1960, 7 June 60, pub. 20 Aug 62, by Kurashiki-Rayon Co.

DESCRIPTORS: *Styrene plastics, Styrenes, Methyl radicals, Polymerization, *Ziegler catalysts, *Aluminum compounds, Ethyl radicals, Titanium compounds, Vanadium compounds, Chlorides, Solvents, Hexanes, Tolulenes, Chloroform, Metalorganic compounds.

Schmieder, K. and Wolf, K.
MECHANICAL RELAXATION PHENOMENA IN HIGH POLYMERS. 12 Apr 62, 3p.
Order from SLA $1.10 63-14020

Partial trans. (p. 149-150) of Kolloid-Z[eitschrift] (West Germany) 1953, v. 134, p. 149-189.

DESCRIPTORS: *Polymers, Mechanical properties, *Relaxation time, Stresses, Vibration.

Schneider, Abraham, Khelghatian, Habet M. and others.
PROCESS FOR PREPARATION OF BLOCK POLYMERS. 3 July 63, 20p.
Order from SA $25.00 SA Code-P62

Trans. of published Japanese patent 11,436/1962, cl. 26-B-11, appl. no. 3529/1960, 8 Feb 60, pub. 18 Aug 62 (Priority: U.S.A., 29 May 59) by Sun Oil Co., U. S. A.

DESCRIPTORS: *Polyethylene plastics, *Block polymers, Mechanical properties, Ethylenes, *Propenes, Polymerization, *Ziegler catalysts, Metalorganic compounds, Titanium compounds, Chlorides, Aluminum compounds, Ethyl radicals.

Shin, Yuji.
METHOD OF MANUFACTURING POLYOLEFINE MOLDINGS HAVING GOOD DYEING PROPERTY. July 63, 6p.
Order from SA $16.00 SA-Code-P-77

Trans. of [published] Japanese patent 12932/1962, cl. 25-N-23 (26-B-11) (25-H-31) (48-B-02), filed 8 Mar 61, appl. 7963/1961, pub. 4 Sep 62, by Toyo Rayon Co. Ltd.

DESCRIPTORS: *Fibers (Synthetic), *Plastic films, *Nylon, *Polyethylene plastics, Mechanical properties, Processing, Manufacturing methods, *Ethylene oxide, Potassium compounds, Hydroxides, *Dyes, Resorcinol, Quinones.

Skorokhodov, L. N.
CERTAIN QUESTIONS RELATING TO THE THEORY OF THE WELDING OF PLASTICS BY ULTRASOUND. 29 Apr 63 [12]p. FTD-TT-63-359.
Order from OTS or SLA $1.60 63-19641

Unedited rough draft trans. of Plasticheskie Massy (USSR) 1962, no. 11, p. 33-35.

DESCRIPTORS: *Plastics, *Ultrasonic radiation, Theory, *Thermal joining, Welding, Mechanical properties.

A brief description is given of a promising new process of welding plastics by ultrasound and of some of its applications in the manufacture of industrial articles. A first attempt was made to substantiate theoretically the essence of the process of ultrasonic welding of plastics. (Author)

Sochava, I. V.
SPECIFIC HEAT OF POLYMETHYLMETHACRYLATE AND POLYSTYRENE AT LOW TEMPERATURES. [1962] [5]p. 6 refs.
Order from OTS or SLA $1.10 63-13402

Trans. of Leningrad U. Vestnik (USSR) 1961, v. 16, no. 10, Ser[iya] Fizika i Khimiya, no. 2, p. 70-72.

DESCRIPTORS: *Specific heat, *Methyl radicals, *Styrenes, Low temperature research, *Acrylic resins, Styrene plastics.

The specific heat of polymethylmethacrylate and polystyrene was measured at temperatures between 16° and 50°K. The temperature dependence of the heat capacities of both substances was found to be linear at temperatures above 40°K. The high values of the specific heat of polymethylmethacrylate, compared to that of polystyrene, at temperatures above 60°K are attributed to torsional vibrations of the methyl groups in the former. (Author)

Stuart, Archibold Parkstan and [Khelghatian, Habet M.].
A PROCESS FOR THE POLYMERIZATION OF OLEFINS. 3 July 63 [9]p.
Order from SA $16.00 SA Code-P70

Trans. of published Japanese patent 11,538/1962, cl. 26-B-11, appl. no. 27,952/1960, 16 June 60, pub. 20 Aug 62, by Sun Oil Co., U. S. A.

DESCRIPTORS: *Polyethlene plastics, Ethylenes, *Propenes, Polymerization, *Ziegler catalysts, Metalorganic compounds, Titanium compounds, Zirconium compounds, Chlorides, Aluminum compounds, Ethyl radicals.

Takashi, Yukichi, Aijima, Hayaho and others.
MOLECULAR WEIGHT CONTROLLING PROCESS OF MONOOLEFIN POLYMER. July 63, 9p. 1 ref.
Order from SA $19.00 SA Code-P-57

Trans. of [published] Japanese patent 1593/1962, cl. 26-B-11 (26-B-121) (26-B-012) (13-F-1) appl. no. 11246/1960, 31 Mar 60, pub. 9 May 62, by Asahi-Kasei Industrial Co.

DESCRIPTORS: *Polyethylene plastics, Molecular weight, Control, Ethylenes, Propenes, Butenes, Polymerization, Metalorganic compounds, *Ziegler catalysts, Titanium compounds, Chlorides, Alkaline metal compounds, Sodium compounds, Potassium compounds, Group II elements, Zinc compounds, Ethyl radicals, *Chloroacetic acids.

Takasugi, Shintaro.
A PROCESS OF REACTIVATION OF THE CATALYTIC BODY FOR SYNTHESIS OF VINYL ESTER. July 63, 8p. 3 refs.
Order from SA $19.00 SA Code-P-56

Trans. of [published] Japanese patent 1893/1962, cl. 13-F-5 (16-B-61) additional pat. to 279224, appl. no. 24987/1959, 3 Aug 59, pub. 14 May 62, by Shin'etsu Kagaku Kogyo, Inc.

DESCRIPTORS: *Vinyl plastics, Vinyl radicals, *Esters, Acetates, Synthesis, *Catalysts, Activated carbon, *Zinc compounds, Acetates, Mercury compounds, Chlorides, Fluidized solids, Acetylenes, Acetic acids, Towers (Chemistry`

Tanaka, Hideo; Tomioka, Sei and others.
A PROCESS FOR THE PRODUCTION OF CRYSTALLINE VINYLCHLORIDE POLYMERS. 3 July 63 [9]p.
Order from SA $16.00 SA Code-P65

Trans. of published Japanese patent 11,542/1962, cl. 26-B-141, appl. no. 38497/1960, 20 Sep 60, pub. 20 Aug 62, by Daiwa-Boseki Co.

DESCRIPTORS: *Polyvinyl chloride, Crystals, Production, Copolymerization, *Nitriles, Butyl radicals, *Acetonitriles, *Benzonitriles.

Thomas, Charles Lamer.
CATALYTIC COMPOSITIONS FOR THE POLYMERIZATION OF OLEFINS. 6 July 63, 13p.
Order from SA $19.00 SA Code-P93

Trans. of published Japanese patent 13,904/1960, cl. 13-F-1 (26-B-11) (26-B-211) appl. no. 23,525/1957, 21 Sep 57, pub. 22 Sep 60 (Priority: USA, 26 Sep 56) by Sun Oil Co., U.S.A.

DESCRIPTORS: *Catalysts, Production, *Titanium compounds, *Zirconium compounds, Chlorides, *Aluminum compounds, Oxides, Impregnation, Magnesium compounds, Silicon compounds, *Polyethylene plastics, Ethylenes, Propenes, Polymerization.

Ueda, Keizo, Mikami, Hiroshi, and Ohkawara, Tsuneo.
METHOD OF MANUFACTURING POLYAMIDES. 6 July 63, 4p.
Order from SA $16.00 SA Code-P98

Trans. of published Japanese patent 13,896/1962, cl. 26-C-3 (26-D-5) (13-F-151) appl. no. 24,536/1960, 14 May 60, pub. 13 Sep 62, by Kanegafuchi Boseki Co., Ltd.

DESCRIPTORS: *Polyamide plastics, Manufacturing methods, *Oximes, Polymerization, Alcohols, Salts, Potassium compounds, Sodium compounds, Lithium compounds, Methanols, Ethanols, Propanols, Butanols.

Vries, A. J. de.
STRUCTURE AND RHEOLOGY PROPERTIES OF POLYVINYL CHLORIDE PLASTISOLS. 24 Sep 62, 9p. (figs. tables formulae refs. omitted).
Order from SLA $1.10 63-14374

Trans. of Rheologica Acta (West Germany) 1958, v. 1, no. 2/3, p. 274-280.

DESCRIPTORS: *Polyvinyl chloride, *Plastics, *Colloids, Viscosity, Plasticity, Plasticizers, Particles.

Wiezerot, Karl and Kastning, Ernst Guenter
METHOD OF MANUFACTURING POLYMER FROM UNSATURATED OLEFINE HYDROCARBON. 5 July 63, 9p.
Order from SA $19.00 SA Code-P85

Trans. of published Japanese patent 893/1959, cl. 26-B-11 (13-F-13) appl. no. 18,366/1956, 14 July 56, pub. 21 Feb 59 (Priority: Germany, 3 Dec 55) by Badische Anilin und Soda-Fabrik AG, Germany.

DESCRIPTORS: *Polyethylene plastics, *Styrene plastics, Manufacturing methods, Ethylenes, *Propenes, Styrenes, Polymerization, Catalysts, Metalorganic compounds, *Ziegler catalysts, *Sodium compounds, Pentyl radicals, *Titanium compounds, *Chromium compounds, Vanadium compounds, Chlorides.

Zakharov, V. A., Nadezhina, G. N., and Sakharova, V. I.
THE CHANGE IN THE PHYSICO-MECHANICAL AND ELECTRO-INSULATIONAL PROPERTIES OF SOME COMPRESSED MATERIALS UNDER THE INFLUENCE OF TEMPERATURE AND OTHER FACTORS (MOISTURE, FUELS AND OILS). 15 Apr 63 [38]p. 15 refs. FTD-TT-62-1857.
Order from OTS or SLA $3.60 63-19573

Unedited rough draft trans. of mono. Steklotekstoliti i Drugie Konstruktsionne Plastiki [Moscow] 1960, p. 139-168.

DESCRIPTORS: Materials, *Plastics, Compressive properties, Glass textiles, Absestos, Mechanical properties, Electric insulation, Heat tolerance, Powders.

Data are given which were obtained as a result of the influence of temperature on the principal physico-mechanical and electroinsulational properties of some compressed plastic masses: fiberglass AG-4, KMS-9 and TVFE-2; asbestos fiber materials K41-5 and KMK-218 and powdered plastics KMK-9 and V4-70.

Rubber and Elastomers

Gladding, Edward Cartier and Lo, Roland Syoine.
IMPROVEMENT ON THE ELASTOMER-FORM COPOLYMERS OF ETHYLENE. July 63, 33p.
Order from SA $37.00 SA Code-P-60

Trans. of Japanese patent publication 15039/1962, cl. 26 B 11(26 B 21) appl. no. 35656/61, 5 Oct 61, pub. 25 Sep 62, priority claim: 5 Oct 60, 16 June 61, U. S. A., by E. A. DuPont de Nemours & Co., Delaware.

DESCRIPTORS: *Elastomers, *Polyethylene plastics, Production, Ethylenes, *Propenes, *Dienes, *Hexadienes, Copolymerization, Metalorganic compounds, *Ziegler catalysts, *Aluminum compounds, Butyl radicals, Chlorides, *Vanadium compounds, Acetyl radicals, Acetones, Methyl radicals, Ethyl radicals, Halides, Ethanes.

Nakano, Senji, Iwasaki, Koichiro and others.
A PROCESS FOR MANUFACTURING ISOBUTYLENE POLYMERS OR COPOLYMERS. July 63, 7p.
Order from SA $19.00 SA Code-P-108

Trans. of [published] Japanese patent 15489/1962, cl. 26-B-11 (13-F-1) filed 27 May 60, appl. 25438/1960, pub. 28 Sep 62, by Mitsubishi-Kasei-Kogyo Co.

DESCRIPTORS: Elastomers, *Polyethylene plastics, Manufacturing methods, *Butenes, Polymerization, Copolymerization, Metalorganic compounds, *Ziegler catalysts, *Boron compounds, Fluorides, *Magnesium compounds, Aluminum compounds, Ethyl radicals, Benzyl radicals, Bromides.

Wood and Paper

Aro, Paavo, Korpela, Tapio, and Nisula, Pentti.
INVESTIGATION ON BARKING LOSSES OF THIN SPRUCE AND BIRCH PULP WOOD. Mar 63, 23p. 14 refs. (figs. omitted) FPRB Trans. no. 157.
Order from NRCC NRCC C-4411

Trans. of Metsäntutkimuslaitos. Julkaisuja (Finland) 1958, v. 50, p. 1-29.

DESCRIPTORS: *Wood pulp, Trees, *Wood, Machines, *Material removal, Measurement.

Jayme, G. and Fengel, D.
ELECTRON OPTICAL STUDIES OF THE FINE STRUCTURE OF SOFTWOOD CELLS. Jan 63 [7]p. (figs. tables omitted) 33 refs.
Order from SLA $1.10 63-14470

Trans. of das Papier (West Germany) 1962, v. 16, no. 10a, p. 519-524.

DESCRIPTORS: *Electron microscopes, Wood, *Wood pulp, *Electron optics.

Jayne, Georg, and Nischk, Raimund.
PREPARATION OF HEMICELLULOSE FROM POPLAR WOOD BY BUFFERED AND REDUCING DECOMPOSITION. [1963] 4p.
Order from SLA $1.10 63-14125

Trans. of Woch[enblatt für] Papierfabr[ikation] (West Germany) 1957, v. 85, p. 7-9.

DESCRIPTORS: *Hemicellulose, *Wood, Decomposition, Wood pulp, Paper industry, Lignin, Reduction (Chemistry), Buffers, Sodium compounds, Sulfur compounds, Oxides, Sulfites, Bleaching.

Ljunggren, Bertil.
CONCERNING PEROXIDE BLEACHING OF GROUND PULP: REVIEW OF THE LITERATURE AND PATENTS, PT. I. [1963] 22p. (figs. omitted) 30 refs.
Order from SLA $2.60 63-16024

Trans. of Svensk Pappers-tiding, 1947, v. 50, p. 159-168.

DESCRIPTORS: *Bleaching agents, *Peroxides, *Wood pulp, Hydrogen peroxide, Sodium compounds, Metals, Catalysts, Bacteria, Enzymes, Paper industry, Reviews, Sweden.

Ljunggren, Bertil.
CONCERNING PEROXIDE BLEACHING OF GROUND PULP: REVIEW OF THE LITERATURE AND PATENTS, PT. II. [1963] [22]p. (figs. omitted) 16 refs.
Order from SLA $2.60 63-16038

Trans. of Svensk Pappers-tidning [1947] v. 50, p. 196-204.

DESCRIPTORS: *Bleaching agents, *Peroxides, *Wood pulp, Patents, Manufacturing methods, Costs, Operation, Control, Physical properties, Mechanical properties, Paper industry, Reviews, Sweden.

MATHEMATICS

MULTIPLICATIVE PROCESSES, STOCHASTIC DIFFERENTIAL EQUATIONS, AND APPLICATIONS. Foreign Developments in Machine Translation and Information Processing no. 46. 25 Oct 61 [27]p. 6 refs. JPRS: 10679.
Order from OTS or SLA $2.60 62-13689

Trans. of Rapport GRISA [sic] 1960, no. 8, p. 1-25.

DESCRIPTORS: Applied mathematics, *Probability, *Differential equations, Functions, Partial differential equations, *Reactor control, *Multiplication factor Machine translation.

Contents:
Axioms
Aleatory Analysis
Stochastic Process
Mathematical Pattern
Improvements of Pattern
Chapman Kolmogoroff Equations
Control of Nuclear Reactors
Solving Equations with Partial Derivates.

Cartan, Henri.
ELEMENTARY THEORY OF ANALYTIC FUNCTIONS OF ONE OR SEVERAL COMPLEX VARIABLES, tr. by John Standring and H. B. Shutrick. 1963, 228p.
Order from Addison-Wesley Publishing Co., Inc., Reading, Mass.

Trans. of mono. Théorie Élémentaire des Fonctions Analytiques d'Une ou Plusieurs Variables Complexes, Paris, 1963.

DESCRIPTORS: Mathematics, Textbooks, *Functions, *Complex variables, Taylor's series, Potential theory, Sequences, Topology, Transformations (Mathematics), Calculus

Charnyi, I. A.
ON METHODS FOR THE LINEARIZATION OF NONLINEAR EQUATIONS SIMILAR TO HEAT-CONDUCTIVITY EQUATIONS (O Metodakh Linearizatsii Nelineinykh Uravnenii Tipa Uravnenii Teploprovodnosti) [1962] [14]p. 2 refs.
Order from OTS or SLA $1.60 63-13021

Trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya, 1951, no. 6, p. 829-838.

DESCRIPTORS: Applied mathematics, *Nonlinear differential equations, Partial differential equations, Integration, Equations, Equations of motion, Equations of state, Vector analysis, Special functions.

The method of linearization which was devised for nonlineary equations similar to the equations of thermal conductivity, is based upon an approximation of the nonlinear coefficient by another relationship, so chosen that the nonlinear equations become linear. Applications to problems of nonstationary filtration of gases in a porous medium, and of nonstationary movement of ground flows with free surface are given; also to the problem of determining temperature in a solid body whose coefficient of thermal conductivity depends upon temperature. (Author)

Chavchanidze, V. V. and Kumsishvili, V. A.
THE DETERMINATION OF LAWS OF DISTRIBUTION ON THE BASIS OF A SMALL NUMBER OF OBSERVATIONS. 8 Mar 63 [19]p. 4 refs. FTD-TT-62-1048; AD-299 643.
Order from OTS or SLA $1.60 63-19571

Unedited rough draft trans. of mono. Primenenie Vychislitel'noi Tekhniki dlya Avtomatizatsii Proizvodstva, Moscow, 1961, p. 129-139.

DESCRIPTORS: *Statistical distributions, *Statistical analysis, Sampling

Maksimov, A. D.
APPROXIMATE SOLUTION TO A NONLINEAR DIFFERENTIAL EQUATION OF THE THIRD ORDER WITH THE N. N. BOGOLYUBOV ASYMPTOTIC METHOD (Priblizhennoe Reshenie Nelineimogo Differentsial'nogo Uravneniya Tret'ego Poryadka Asimptoticheskim Metodom N. N. Bogolyubova) tr. by Joseph L. Zygielbaum. Jan 63, 10p. 5 refs. NASA TT F-133; N63-12061.
Order from OTS $0.50 63-11645

Trans. of Akademiya Nauk SSSR. O[tdelenie] T[echnicheskikh] N[auk]. Izvestiya: Energetika i Avtomatika, 1962, no. 3, p. 196-200.

DESCRIPTORS: *Nonlinear differential equations, Numerical analysis, *Oscillation, Damping, Neutralization, *Series, Integration.

The expressions developed have application to the investigation of rapidly damped oscillation processes in systems of the third order. (NASA abstract)

Piehler, J.
A CONTRIBUTION TO THE SEQUENCING PROBLEM (Ein Beitrag zum Reihenfolgeproblem). [1963] [10]p. (foreign text included) 3 refs.
Order from SLA $1.10 63-14077

Trans. of Unternehmensforschung (West Germany) [1960] v. 4, no. 3, p. 138-142.

DESCRIPTORS: *Operations research, *Scheduling, Sequences, Matrix algebra.

Sequencing problems are concerned with working of several products over a series of machines, where the working times of these products differ from one machine to another. The problem is to find an optimal sequence of the products minimizing the total elapsed time. Under certain restrictions the problem is reduced to solving the travelling salesman problem. The method is illustrated by a simple example. (Author)

Computing Devices

Glushkov, V. M.
THOUGHT AND CYBERNETICS. 22 Mar 63 [19]p. JPRS: 18302.
Order from OTS $0.50 63-21395

Trans. of Voprosy Filosofii (USSR) 1963, v. 17, no. 1, p. 36-48.

DESCRIPTORS: *Cybernetics, Language, Bionomics, *Digital computers, Brain, Ecology, Automation, *Mathematical logic.

The abstract quality of cybernetics is discussed, including the use of an abstract alphabet. Continuous and discrete forms of information are mentioned. Two questions are discussed: (1) To what extent is it possible to formalize actual human languages? (2) Which part of human thought can be modelled by means of such formal languages? Also discussed are the information converter, problems of transforming words into numbers, and the problem of automation of human mental activity. Characteristics of language are presented. Mathematical logic is suggested as a solution for construction of synthetic universal languages for use in logical thinking. The attainment of absolutely complete knowledge is theorized. It is concluded that a complete formalization of logical thought cannot be accomplished. Philosophical statements are made about the system of rules defining the regularities of brain functioning and its applicability to cybernetics. The algorithmic universality of digital computers is noted. The possibility of machines being more intelligent than man and the relative value of each are considered.

Office of Technical Services, Dept. of Commerce, Washington, D. C.
MACHINE TRANSLATIONS. Apr 63, 20p. 252 refs. OTS Selective Bibliography SB-470, Rev.
Order from OTS $0.10 OTS SB-470, Revised

DESCRIPTORS: *Bibliographies, *Machine translation, Programming (Computers), Pattern recognition, Memory devices, Philology

Lists 252 reports and translations added to the OTS collection up to April 1963. Covers research on language coding, computer analysis of sentences, predictive syntactic analysis, development of photomemory, foreign developments in machine translations among other subjects. (Author)

Gutenmakher, L. I.
INFORMATION MACHINE. 2 Apr 63 [10]p.
FTD-TT-63-221. AD-402 597.
Order from OTS or SLA $1.10 63-19343

Unedited rough draft trans. from Ekonomicheskaya Gazeta (USSR) 1962, no. 37[58] p. 26-27.

DESCRIPTORS: *Digital computers, Computers, Chemistry, Data, Processing, Information retrieval.

MECHANICS

Abramyan, B. L. and Babloyan, A. A.
ON THE PROBLEM OF AXISYMMETRIC DEFORMATION OF A HOLLOW CYLINDER OF FINITE LENGTH, tr. by George N. Kasachkoff. 7 Nov 62, 17p. 12 refs. [AMC] (Redstone) Trans-nr-39-62.
Order from OTS or SLA $1.60 63-13055

Trans. of Akademiya Nauk Armyanskoi SSSR [Erevan]. Izvestiya. [Seriya Fiziko-Matematicheskikh Nauk] 1962, v. 15, no. 2, p. 87-99.

DESCRIPTORS: *Cylindrical bodies, *Deformation, Elasticity, Load distribution, Stresses, Numerical analysis, Fourier analysis, Series.

The article gives an accurate solution to the axisymmetric problem of the theory of elasticity for a hollow cylinder of finite length, when an arbitrary load is applied to its lateral surface, and normal displacements and tangential stresses are assigned to the ends. (Author)

Branover, G. G., Kirko, I. M., and Lielausis, O. A.
EXPERIMENTAL INVESTIGATION OF THE EFFECT OF A TRANSVERSE MAGNETIC FIELD ON VELOCITY DISTRIBUTION IN A MERCURY FLOW. 25 Apr 63 [12]p. (1 fig. omitted) 3 refs. FTD-TT-62-1827.
Order from OTS or SLA $1.60 63-19661

Unedited rough draft trans. of A[kademiya] N[auk] Latviiskoi SSR [Riga]. Institut Fiziki. Trudy, 1961, v. 12, p. 167-175.

DESCRIPTORS: *Liquid metals, *Mercury, Hydrodynamics, Velocity, Magnetic fields, Magnetic properties, Experimental data, *Magnetohydrodynamics.

El'yashevich, M. A. and Anisimov, S. I.
RELAXATION PHENOMENA AT A HIGH SPEED GAS FLOW. 15 Apr 63 [6]p. 3 refs.
FTD-TT-62-1670.
Order from OTS or SLA $1.10 63-19531

Unedited rough draft trans. of Akademiya Navuk BSSR [Minsk]. Doklady, 1961, v. 5, no. 8, p. 324-326.

DESCRIPTORS: *Gas flow, *Relaxation time, Kinetic theory, Dynamics.

Kosmodem'yanskii, A[rkadii] A[leksandrovich].
A COURSE IN THEORETICAL MECHANICS [FOR DEPARTMENTS OF PHYSICS AND MATHEMATICS IN PEDAGOGICAL INSTITUTES] 2D ED. REV., tr. by A. Moscona. 1963, 534p. PL-480 NASA; NASA-TT-F-8015.
Order from OTS $5.25 62-11002

Trans. of mono. Kurs Teoreticheskoi Mekhaniki [dlya Fiziko-Matematicheskikh Fakul'tetov Pedagogicheskikh Vuzov] 2d ed. rev., Moscow, 1955 [655p.]

Contents:
Kinematics
Introduction. Fundamental concepts of mechanics. A brief historical sketch of the development of mechanics
The kinematics of a particle
The kinematics of a rigid body

Kinetics
Basic concepts and laws of kinetics
Kinetics of a free particle
Relative motion and equilibrium of a particle
Kinetics of a constrained particle
Statics of systems of particles and of the rigid body
Fundamental theorems on the dynamics of a system
The dynamics of a rigid body
General principles and equations of mechanics
The mechanics of bodies of varying mass
Dynamics of a particle of varying mass
Generalized meshcherskii equation. Converse problems of the dynamics of a point of varying mass
Fundamental theorems of the dynamics of a particle of varying mass
Fundamental theorems of the dynamics of a body of varying mass
Introduction to aerohydrodynamics

Lyakhov, G. M. and Polyakova, N. I.
INTERACTION BETWEEN A SHOCK WAVE IN AN ELASTO-PLASTIC MEDIUM AND A NONRIGID WALL. 26 Apr 63 [16]p. 3 refs. FTD-TT-63-360.
Order from OTS or SLA $1.60 63-19653

Unedited rough draft trans. of Zhurnal Prikladnoi Mekhaniki i Tekhnicheskoi Fiziki (USSR) 1962, no. 5, p. 89-95.

DESCRIPTORS: *Shock waves, Propagation, Reflection, Models (Simulations), *Elasticity, *Plasticity, Stresses, Differential equations, Integration, Mechanical waves, Walls.

A solution is given to the problem of the interaction between a plane wave and a nonrigid wall or the boundary of media in the case of large stresses, corresponding to the section of the diagram $\sigma(\varepsilon)$ which is convex relative to axis ε. Here the wave is a shock wave. (Author)

Neyroles, Bernard.
THE MECHANICS OF SOLIDS: A TRIDIMENSIONAL RHEOLOGICAL MODEL REPRESENTING THE HARDENING OF STRUCTURES. [1963] 5p. 3 refs.
Order from SLA $1.10 63-14744

Trans. of Academie des Sciences [Paris]. Comptes Rendus (France) 1962, v. 255, no. 2, p. 252-254 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: Solids, *Hardening, *Elasticity, *Plasticity, Deformation, Mechanics, Stresses, Mathematical analysis.

Remnev, Yu. I.
SYMMETRICAL DEFORMATION OF A SPHERE WITH VOLUME EXPANSION, tr. by George N. Kasachkoff and Donald C. Rich. 3 Apr 62 [11]p. 7 refs. AMC (Redstone) Trans. nr-16-62.
Order from OTS or SLA $1.60 62-23919

Trans. of [Moscow U. Vestnik. Seriya Matematiki, Mekhaniki, Astronomii, Fiziki, Khimii] (USSR) 1959 [v. 14] no. 2, p. 43-47.

DESCRIPTORS: *Deformation, *Spheres, *Elasticity, *Plasticity, Numerical analysis.

Romanenko, P. N. and Leont'ev, A. I.
EXPERIMENTAL STUDY OF THE TURBULENT BOUNDARY LAYER IN GAS MOTION IN AXISYMMETRICAL DIFFUSERS WITH COOLED WALLS. 25 Mar 63 [32]p. 15 refs. FTD-TT-63-74.
Order from OTS or SLA $3.60 63-19332

Unedited rough draft trans. of Moskovskii Institut Inzhenerov Zheleznodorozhnogo Transporta. [Trudy] (USSR) 1961, no. 139, p. 134-158.

DESCRIPTORS: Experimental data, *Diffusers, *Gas flow, *Turbulent boundary layer, Heat transfer, Mass transfer, Friction, Axially symmetric flow, Pressure.

Results are presented of studies of the turbulent boundary layer in heated air flow in diffusers of circular cross-section with cone angles of $8^{o}4'$ and 12^{o}. The axisymmetrical diffuser makes it possible to eliminate the effect on calculations of the local resistance coefficient and of other flow characteristics of a three-dimensional gas flow which takes place in flat diffusers. The use of experimental data obtained for a flat diffuser hampers the calculation of the resistance coefficient with respect to the integral relation of momenta. In addition, the study of the axisymmetrical flow gradient is of great practical interest. (Author)

Soprunenko, I. P.
BOUNDARY LAYER ON A SLIGHTLY WAVY-SURFACED WALL. 7 Apr 63 [8]p. 4 refs. FTD-TT-63-220.
Order from OTS or SLA $1.10 63-19525

Unedited rough draft trans. of A[kademiya] N[auk] SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Mekhanika i Mashinostroenie, 1962, no. 2, p. 131-133.

DESCRIPTORS: *Gas flow, *Boundary layer, Fluid dynamic properties, Walls, Friction, Flat plate models, Partial differential equations, Series.

Torochkov, V. Yu.
A GYROSCOPIC DAMPER OF ANGULAR OSCILLATIONS. 3 Apr 63 [7]p. 1 ref. FTD-TT-62-1887.
Order from OTS or SLA $1.10 63-19407

Unedited rough draft trans. of Moskovskii Institut Inzhenerov Geodezii, Aerofotos"emkii i Kartografii. Trudy (USSR) 1961, v. 44, p. 85-88

DESCRIPTORS: *Oscillation, *Damping, *Gyroscopes, Gyro stabilizers.

Zhui-Fyn, U.
BENDING OF A PRISMATIC BEAM UNDER CONDITIONS OF NON-STATIONARY CREEP, tr. by Ingeborg V. Baker. 13 Mar 63 [15]p. 3 refs. RSIC-4.
Order from OTS or SLA $1.60 63-15911

Trans. of Akademiya Nauk Armyanskoi SSR [Erevan] Doklady, 1960, v. 30, no. 3, p. 139-149.

DESCRIPTORS: *Beams (Structural), Prismatic bodies, Deflection, Creep, Stresses, Deformation, Algebra, Concrete.

Topics include: The relationship between the deformations and stresses during non-linear creep; equations basic to the bending of a prismatic beam; inverse problem of the bending of a prismatic beam; and, direct problem of the bending of a prismatic beam.

Aerodynamics and Pneumatics

Artamanov, K. I., Krutikova, I. G., and Bolotin, V. V.
THERMOACOUSTICAL INSTABILITY OF A HETEROGENEOUS GAS FLOW [AND] NON-STEADY FLUTTER OF PLATES AND SLANTED SHELLS IN GAS FLOWS. 22 Apr 63 [29]p. 11 refs. FTD-TT-63-204.
Order from OTS or SLA $2.60 63-19664

Unedited rough draft trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Mekhanika i Mashinostroenie [1962, no. 3] p. 19-23, 106-113.

DESCRIPTORS: *Gas flow, *Stability, Thermodynamics, Acoustics, Numerical analysis, Differential equations, *Aerodynamic configurations, Flat plate models, Structural shells, *Flutter, Supersonic flow, Fluid dynamic properties.

Arutyunyan, G. M.
CLASSIFICATION OF FLOWS IN AIR SHOCK TUBES. 1 May 63 [15]p. 2 refs. FTD-TT-63-309.
Order from OTS or SLA $1.60 63-19637

Unedited rough draft trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Mekhanika i Mashinostronenie, 1961, no. 2, p. 106-111.

DESCRIPTORS: Air, *Shock tubes, *Shock waves, Propagation, *Gas flow, Classification, Superaerodynamics.

It was established that for arbitrary variation of the parameters p_s, p_o, L, and χ there may exist in an air shock tube 12 characteristic regimes when $u_s \leq c_k$, 11 when $c_k < u_s < c_s$, and 7 when $u_s \geq c_s$. Altogether, therefore, no more than thirty types of flow may exist in the shock tube. The dimensionless quantities ω_1, ω_2, ω_3, α_1, α_2, α_3, β_1, β_2, and β_3 are functions only of the ratio p_s/p_o. Presented are the curves of these functions, which divide the graph plane into a number of regions corresponding to the thirty possible characteristic regimes considered above. This representation is convenient for determining the type of flow for given values of the parameters p_s, p_o, L, and χ (or p_c, p_o, L, and χ). In fact, for this purpose it is enough to form the ratios p_s/p_o and L/χ and then establish in which of the characteristic regions the point determined by these ratios in the graph plane belongs. (Author)

Avduevskii, V. S.
CALCULATING A THREE-DIMENSIONAL LAMINARY BOUNDARY LAYER ON SPREADING LINES. 15 Feb 63 [16]p. 4 refs. FTD-TT-62-1723. AD-401 590
Order from OTS or SLA $1.60 63-19199

Unedited rough draft trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Mekhanika i Mashinostroenie, 1962, no. 1, p. 32-41.

DESCRIPTORS: *Fluid flow, *Laminar boundary layer, *Friction, *Heat transfer, Numerical analysis, Integral equations, Special functions, Cylindrical bodies.

For the case of a flow in the environs of spreading lines of a cone under an angle of attack, of an infinite cylinder with slipping and forward critical point, equations of a three-dimensional compressible boundary layer have been transformed into a system of ordinary differential equations. Introduced is a solving method, based on the use of integral ratios and a special form of approximating functions. Numerical solutions have been obtained in a wide range of parameter changes and formulas are given for the calculation of heat exchange, friction and boundary layer characteristics. Calculation results at partial parameter values are in satisfactory agreement with the numerical calculations of other authors. (Author)

Gubarev, A. V. and Suksov, I. I.
INVESTIGATION OF THE WORKING CASCADES OF TURBINES AT SUPERSONIC VELOCITIES [AND] AN APPROXIMATION METHOD FOR CALCULATING STEADY-STATE UNIFORM GAS FLOW IN A TUBE WITH EQUILIBRIUM DISSOCIATION AND IONIZATION, TAKING INTO ACCOUNT RESISTANCE AND HEAT TRANSFER. 19 Mar 63 [32]p. 20 refs. FTD-TT-63-159. AD-402 471
Order from OTS or SLA $3.60 63-19335

Unedited rough draft trans. of Izvestiya V[ysshikh] U[chebnykh] Z[avedenii]. Aviatsionnaya Tekhnika (USSR) 1962, no. 2, p. 102-112, 159-167.

DESCRIPTORS: *Turbines, Turbine blades, *Airfoils, Design, *Supersonic flow, Mach number, Shock waves, Pipes, *Adiabatic gas flow, Thermodynamics, Entropy, Dissociation, Ionization, Chemical equilibrium, *Heat transfer, *Friction, Equations, Graphic analysis.

L'vov, V.
THE HEAT BARRIER. 9 Apr 63 [5]p. FTD-TT-63-56.
Order from OTS or SLA $1.10 63-19526

Unedited rough draft trans. from Komsomol'skaya Pravda (USSR) 1959, 21 Feb, p. 3.

DESCRIPTORS: *Thermodynamics, *Aerodynamic heating, Heat-resistant materials, Air, Friction, Aircraft, Rockets, Temperature.

Shkadov, V. Ya.
SOLVING THE BOUNDARY LAYER PROBLEM. 3 Apr 63 [8]p. 6 refs. FTD-TT-63-283. AD-402 462.
Order from OTS or SLA $1.10 63-19471

Unedited rough draft trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Mekhanika i Mashinostroenie, 1962, no. 3, p. 173-175.

DESCRIPTORS: *Boundary layer, Fluid flow, Shear stresses, Blunt bodies, Series, Equations, Mathematical analysis, Equations of motion, Partial differential equations, Integration.

An equation is introduced by which the shear stresses and point of breakaway on blunt bodies may be calculated for various cases.

Sokolovskii, G. A.
CALCULATION OF A TRANSVERSE CROSS SECTION BY A METHOD OF CHARACTERISTICS. 1 Mar 63 [14]p. 5 refs. FTD-TT-62-1739; AD-401 588.
Order from OTS or SLA $1.60 63-19182

Unedited rough draft trans. of Energomashinostroenie (USSR) 1961 [v. 8] no. 12, p. 22-24.

DESCRIPTORS: Aerodynamic configurations, *Airfoils *Aerodynamic characteristics, Supersonic flow, Stagnation point, Superaerodynamics, Shock waves, Mathematical analysis.

Consideration is given ot a method of constructing a flow spectrum in a transverse cross section by calculating the curvature of the back of the airfoil and of the root compression shock. Calculations for TN-2-II airfoils are compared with experimental results. (Author)

Hydrodynamics, Hydraulics, and Hydrostatics

[RESEARCH ON] VIBRATIONS AND LOAD LOSSES IN TUBULAR CLUSTERS. Quarterly rept. 6, 1 Jan-31 Mar 62, on Contract 025-60-10 RDT. [1962] 7p.
Order from OTS or SLA $1.10 EURAEC-294

Trans. of a rept. from Société Grenobloise d'Étude et d'Applications Hydrauliques (France) Apr 62.

DESCRIPTORS: *Hydraulic models, Cylindrical bodies, Vibration, Deflection, *Hydraulic research, Tests, Fluid flow.

The purpose of the work was to study the vibrations of a cluster of tubular elements, in the form of a bunch of fuel units, in a flow parallel to the axis of the cluster. This work was divided into three parts: (1) change in the hydraulic model; (2) assembly and equipment of the bunch; and (3) preliminary tests on the central element. The latter phase involved studies on the natural frequency in air and in water, and the calibration of the signal gauge.

Schiller, B. W.
OVER CRITICAL DISCHARGE OF COMPRESSIBLE LIQUIDS. [1963] 4p. (figs. omitted).
Order from SLA $1.10 63-14510

Partial trans. (p. 128-132) of Forschung auf dem Gebiete des Ingenieurwesens (Germany) 1933, v. 4, p. 128-137.

DESCRIPTORS: *Fluid flow, *Compressible flow, Nozzles, Turbines, Measurement.

METALLURGY

AUTOMATIC WELDING, 1962 [VOL. 15] NO. 5: SELECTED ARTICLES. 29 Mar 63 [77]p. 61 refs. FTD-TT-62-1247; AD-401 592.
Order from OTS or SLA $7.60 63-19700

Unedited rough draft trans. of #Avtomaticheskaya Svarka (USSR) 1962 [v. 15] no. 5, p. 1-24, 57-63, 78-88.

DESCRIPTORS: *Welding, Automatic, *Punched cards, *Arc welding, Steel, Sheets, Metal plates, Argon, Heat resistant metals and alloys, Austenite, *Boron alloys, Welds, Mechanical properties, *Electron beams *Diffusion, Vacuum apparatus, Copper, Titanium alloys, *Electroslag process, Microstructure, Metal joints, *Aluminum alloys, *Magnesium alloys.

Contents:
A decatron programming unit, by B. E. Paton and others
Weldability of 30KhSNVFA hardening sheet steel in double and single-sided, double-pass argon-shielded arc welding, by S. L. Mandel'berg and V. G. Gordonnii
Alloying of heat-resisting austenitic steels, alloys and welded seams with boron in the 0.3-1.5% range, by B. I. Medovar and others
Special features of electronic heating in welding, by N. A. Ol'shanskii
Investigation of diffusion welding applicable to electro-vacuum apparatus, by I. V. Afanas'ev and A. F. Khudyshev
Molten-slag arcless electric welding of VT5-1 titanium alloy by S. M. Gurevich and V. P. Didkovskii
Press welding of rolled sections of aluminum-magnesium alloys, by A. I. Shestakov and A. A. Rossoshinskii.

PROCESS FOR COATING THE SURFACE OF A METAL OBJECT WITH A CONTINUOUS LAYER OF ANOTHER METAL AND THE PRODUCT THEREOF. [1962] 40p. (figs. omitted).
Order from OTS or SLA $3.60 63-10273

Trans. of Italian patent 487,433, by The Tainton Co., Baltimore (USA) appl. 28 Dec 51, granted 2 Dec 53.

DESCRIPTORS: *Metal coatings, Metals, Bonding, Cold working.

Achard, Jean-Claud; Caro, Paul, and Loriers, Jean.
PREPARATION OF PURE METALLIC SCANDIUM INGOTS USING A CALCIOTHERMIC METHOD. [1962] 3p. 6 refs.
Order from SLA $1.10 62-20147

Trans. of [Academie des Sciences, Paris]. Comptes Rend[us] (France) 1956, v. 243, no. 5, p. 493-495 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Scandium, *Castings, Preparation, Rare earth elements, Chemical reactions, Calcium.

Akimenko, A. D. and Skvortsov, A. A.
HEAT EXTRACTION (FROM LIQUID STEEL) BY CONTINUOUS CASTING MOLDS. May 63, 2600 words.
Order from HB $8.40 HB-5441

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedenii]. Chern[aya] Met[allurgiya] (USSR) 1961, no. 10, p. 29-36.

DESCRIPTORS: *Steel, Castings, Thermal conductivity, Liquid metals, Surface temperatures, Cooling, Molding.

Cutcliffe, John E.
METHOD OF PLATING THE SURFACE OF METALLIC BODIES. [1962] 4p.
Order from OTS or SLA $1.10 63-10883

Trans. of Swiss patent 354,307, cl. 48 b, 8, filed, 6 Sep 57 (priority: Gt. Brit., 10 Sep 56) registered: 15 May 61, pub. 30 June 61, additional patent subordinated to main patent 308,281, by Tainto Co., Baltimore, Md.

DESCRIPTORS: *Metal coatings, *Plating, Metals, Cold-working.

Dekhtyarenko, P. I. and Kozubovskii, S. F.
ON THE ANALYSIS OF THE STATIC ERRORS OF SYSTEMS FOR AUTOMATIC MEASUREMENT OF ROLLING SPEED BY A CORRELATION METHOD. [1962] [7]p. 5 refs. [DSIR] NLL M.8985.
Order from OTS or SLA $1.10 63-15234

Trans. of Avtomatyka (USSR) 1961, no. 5, p. 42-48. Another trans. is available from OTS or SLA $12.00 in 62-25718, JPRS-14390, 5 July 62 [169]p.

DESCRIPTORS: Statics, *Errors, Analysis, *Correlation techniques, *Rolling mills, *Velocity, Automatic, Measurement, Control systems, *Statistical functions.

This is a continuation of a previously published paper (Avtomatyka no. 3, 1961; available in translation from OTS or SLA in 62-15938) which contained a description of the basic schemes of the automation of hot-rolled strip speed measurement by the correlation method. The article considered the dynamics of one such system. The principal sources of static error in a system for automatic measurement of the rolling rate at a constant metal speed are considered. The effect on the accuracy of setting the distance between photogenerators, the calibration of the variable time-delay unit and the dead zones of the extremum controller are analysed. The error of determining the correlation functions, due to the finite time of observation, is considered. Numerical examples are presented. (Author)

Dekhtyarenko, P. I., Kozubovskii, S. F. and others
AN ELECTRONIC DIFFERENTIAL CIRCUIT FOR AUTOMATIC MEASUREMENT OF ROLLING SPEED [1962] [8]p. 7 refs. [DSIR] NLL M.8984.
Order from OTS or SLA $1.10 63-15241

Trans. of Avtomatyka (USSR) 1962 [v. 7] no. 2, p. 63-67.

DESCRIPTORS: *Electronic circuits, *Differentiating circuits, *Rolling mills, *Velocity, Automatic, Measurement, Correlation techniques, Statistical functions, Control systems.

Goryaga, G. I. and Nosyreva, I. A.
VISCOSITY OF MELTED ZINC, ALUMINUM, CADMIUM AND ANTIMONY. 21 Feb 63 [9]p. 10 refs. FTD-TT-62-1697, AD-299 625.
Order from OTS or SLA $1.10 63-19677

Unedited rough draft trans. of Moscow U. Vestnik. Ser[iya] Mat[ematiki] Mekh[aniki] Astron[omii] Fiz[iki] Khim[ii] (USSR) 1958, v. 13, no. 6, p. 59-64.

DESCRIPTORS: *Zinc, *Aluminum, *Cadmium, *Antimony, *Viscosity, Melting, Viscosimeters, Oxides, Impurities, Mathematical analysis.

Gubinskii, V. I. Minaev, A. N., and Taits, N. Yu.
INVESTIGATION OF THE PROCESS OF COOLING OF WIRE ROD AFTER ROLLING IN A CONTINUOUS MILL. May 63, 2000 words.
Order from HB $6.50 HB-5835

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedenii]. Chern[aya] Met[allurgiya] (USSR) 1962, no. 11, p. 128-132.

DESCRIPTORS: *Rods, Wire, Rolling mills, *Cooling, Hot-working, *Heat transfer, Water, Oxidation.

Haupt, Georg and Krisch, Alfred.
NOTCH IMPACT STRENGTH OF METALS AT LOW TEMPERATURES UP TO TEMPERATURE OF LIQUID HYDROGEN. [1963] [8]p.
Order from SLA $1.10 63-14481

Trans. of [die] Naturwissenchaften (Germany) 1938, v. 26, no. 24/25, p. 290-[293].

DESCRIPTORS: *Cryogenics, Low temperature research, Metals, *Nickel, *Copper, *Lead, *Steel, Tensile properties.

Imai, H., Nozaki, H., and Okamura, T.
ULTRASONIC INSPECTION OF RESISTANCE-WELDED STEEL PIPE AND TUBING. May 63, 850 words.
Order from HB $4.50 HB-5760

Trans. of Tetsu to Hagane (Japan) 1962, v. 48, no. 4, p. 513-514.

DESCRIPTORS: *Pipes, *Resistance welding, *Ultrasonic radiation, Tests, Welds, Non-destructive testing, Steel.

Isaev, E. L., Kushnarov, I. T. and others.
TYPES OF TUNDISH USED IN MULTI-STRAND CONTINUOUS CASTING OF STEEL. May 63, 1900 words.
Order from HB $6.70 HB-5952

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedenii]. Chern[aya] Met[allurgiya] (USSR) 1958, no. 3, p. 29-33.

DESCRIPTORS: *Steel, *Casting, Industrial equipment, Design, Slags, Impurities, Fluid flow.

Ishimitsu, A. and others.
VISUAL OBSERVATION OF THE SINTERING PROCESS (OF IRON ORES). May 63, 800 words.
Order from HB $3.30 HB-5683

Trans. of Tetsu to Hagane (Japan) 1962, v. 48, no. 4, p. 362-363.

DESCRIPTORS: *Sintering, *Iron, Ores (Metal sources), Coke, Test methods, Laboratory furnaces.

Itaoka, T., Saito, K. and others.
CONTROL OF DEOXIDATION IN THE BASIC OXYGEN (LD) PROCESS. May 63, 1300 words.
Order from HB $4.80 HB-5674

Trans. of Tetsu to Hagane (Japan) 1962, v. 48, no. 4, p. 464-465.

DESCRIPTORS: *Furnaces, *Oxygen, Oxidation-reduction reactions, Slags, Control, *Steel.

Itaoka, T., Saito, T., and Ito, M.
STUDIES CONCERNING THE TAP HOLE OF THE BASIC OXYGEN (LD) FURNACE. May 63, 1300 words.
Order from HB $4.90 HB-5769

Trans. of Tetsu to Hagane (Japan) 1962, v. 48, no. 11, p. 1358-1359.

DESCRIPTORS: *Furnaces, Oxygen, Refractory materials, Erosion, Steel.

Koval'chenko, M. S. and Samsonov, G. V.
APPLICATION OF THE THEORY OF VISCOUS FLOW TO THE SINTERING OF POWDERS BY HOT PRESSING. [1962] [13]p. 21 refs.
Order from OTS or SLA $1.60 AEC-tr-5572

Trans. of Poroshkovaya Metallurgiya (USSR) 1961, v. 1, no. 2, p. 3-13.

DESCRIPTORS: Theory, Viscosity, *Sintering, *Powders, Porous materials, *Tungsten compounds, *Carbides, Chromium compounds, Energy, Temperature, Crystal lattices, Powder metallurgy.

An analysis was made of the densification process in the sintering of powders by hot pressing. By setting the work done by external forces equal to the work of the dissipative forces of internal friction and equation was obtained relating the rate of densification of the applied pressure. It was shown that the sintering of powdered crystalline substances involves a linear relationship between the viscosity of the compact material and the sintering time. An experimental check was made of the equations derived for the sintering of tungsten carbide powder by hot pressing and the viscosities at sintering temperatures and the energy required for loosening the constant carbide lattice was determined. A quantitative workup was made of the available literature data on the hot pressing of chromium carbide and the viscosity of Cr_3C_2 at sintering temperatures was determined, as well as the energy required to loosen the Cr_3C_2 lattice. (Author)

Koya, M., Matsunaga, K., and Nakatani, M.
ON THE WEAR OF BASIC OXYGEN LD FURNACE LININGS. May 63, 800 words.
Order from HB $3.30 HB-5739

Trans. of Tetsu to Hagane (Japan) 1962, v. 48, no. 11, p. 1356-1357.

DESCRIPTORS: *Furnaces, Oxygen, *Refractory materials, *Erosion, Steel, Life expectancy.

Murakami, A., Takei, K., and Sato, Y.
CONSIDERATIONS REGARDING THE REDUCING PROCESS IN ELECTRIC SMELTING. May 63, 1400 words.
Order from HB $4.90 HB-5948

Trans. of Tetsu to Hagane (Japan) 1960, v. 46, no. 10 p. 1142-1144.

DESCRIPTORS: *Electric furnaces, *Smelting, Chemical analysis, Microstructure, Ores (Metal sources), Slags, *Iron, Electrical conductance, Impurties, Magnetite.

Nakano, T., Takada, H. and others.
WAYS OF IMPROVING THE HOT WORKABILITY OF HIGH-ALLOY STEELS. May 63, 800 words.
Order from HB $3.30 HB-5958

Trans. of Tetsu to Hagane (Japan) 1962, v. 48, no. 11, p. 1381-1383.

DESCRIPTORS: *Steel, Rare earth elements, Nitrogen, Stainless steel, Nickel alloys, Chromium alloys, Molybdenum alloys, Heat treatment, Mechanical properties, *Hot working.

Nesterov, N. A. and Grdina, Yu. V.
DEVELOPMENT OF PRECIPITATION-HARDENING CUTTING-TOOL COMPOSITIONS. May 63, 2000 words.
Order from HB $5.50 HB-5898

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedenii]. Chern[aya] Met[allurgiya] (USSR) 1963 [v. 6] no. 2, p. 129-132.

DESCRIPTORS: *Tool steel, Cobalt alloys, Tungsten alloys, Titanium alloys, Silicon alloys, Hardening, Microstructure, Life expectancy, Martensite, Heat treatment, *Dispersion hardening, Cutting tools.

Ostrik, P. N. and Rostovtsev, S. T.
LABORATORY APPARATUS FOR AUTOMATIC RECORDING OF THE REDUCTION KINETICS OF METAL OXIDES. May 63, 1800 words.
Order from HB $4.80 HB-5661

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedenii]. Chern[aya] Met[allurgiya] (USSR) 1961, no. 7, p. 195-198.

DESCRIPTORS: *Laboratory equipment, Balances, Controlled atmospheres, Recording systems, Automatic, Reduction (Chemistry), Metals, Oxides, Carbon, Dynamics, Hydrogen.

Romenets, V. A., Bannyi, N. P., and Ageeva, V. A.
STUDY OF THE TECHNICAL AND ECONOMIC CHARACTERISTICS OF STAINLESS STEEL PRODUCTION. May 63, 3700 words.
Order from HB $12.50 HB-5168

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedenii]. Chern[aya] Met[allurgiya] (USSR) 1961, no. 3, p. 197-205.

DESCRIPTORS: *Stainless steel, Steel industry, Furnaces, Maintenance, Power, Oxygen, Costs, Carbon alloys, Chromium alloys, Titanium alloys.

Romenets, V. A., Makaev, S. V., and Lapin, N. L.
INVESTIGATION OF THE PERFORMANCE OF THE ROTOR PROCESS. May 63, 2800 words.
Order from HB $8.40 HB-5437

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedenii]. Chern[aya] Met[allurgiya] (USSR) 1961, no. 9, p. 191-197.

DESCRIPTORS: *Rotary furnaces, *Steel, Economics, Sintering, Oxygen, Operation, Maintenance, Production, Design.

Morimune, T., Hirasawa, R., and Sato, K.
ON THE SELECTIVE REDUCIBILITY OF THE ELEMENTS IN THE PRODUCTION OF METALLIC IRON AT SLAG BASICITIES OF LESS THAN UNITY. May 63, 900 words.
Order from HB $3.40 HB-5943

Trans. of Tetsu to Hagane (Japan) 1960, v. 46, no. 10, p. 1132-1134.

DESCRIPTORS: *Iron, *Slags, Reduction (Chemistry), Carbon, Silicon, Manganese, Copper, Phosphorus, Sulfur. Smelting.

Samsonov, G. V. and Vereikin, L. L.
PHOSPHIDES: SELECTED PARTS. 12 Mar 63 [29]p. FTD-TT-62-1763.
Order from OTS or SLA $2.60 63-19667

Unedited rough draft trans. of mono. Fosfidy, Kiev, 1961, p. 3-4, 45-54, 68-70, 114-118.

DESCRIPTORS: *Phosphides, Metals, Synthesis (Chemistry), Vanadium compounds, Niobium compounds, Tantalum compounds, Chromium compounds, Molybdenum compounds, Tungsten compounds, Thorium compounds, Uranium compounds, Neptunium compounds, Plutonium compounds, Steel, Iron alloy, Phosphorus alloys, Gallium compounds, Copper alloys, Semiconductors, Soldering alloys, Metallurgy, Coatings, Catalysts, Pyrotecnics.

Contents:
Introduction
Phosphides of metals of the subgroup V A (vanadium subgroup)
Phosphides of the metals of the VI a sub-groups (chromium sub-group)
The phosphides of the actinides
The areas in which the alloys of phosphorous are employed in technology.

Sanematsu, T., Kiriyama, S., and Saito, S.
EXPERIMENTS ON THE USE OF OXYGEN IN THE SINTERING OF IRON ORES IN A TEST POT. May 63, 800 words.
Order from HB $3.30 HB-5682

Trans. of Tetsu to Hagane (Japan) 1962, v. 48, no. 4, p. 361-362.

DESCRIPTORS: *Oxygen, *Sintering, *Iron, Ores (Metal sources), Laboratory furnaces.

Sato, R. and Tahata, N.
ON AN EXPERIMENTAL WATER-COOLED BASIC OXYGEN FURNACE. Pt. 5 of Study of Semi-Permanent Wall-Type Furnaces with Automatic Water Cooling. May 63, 1400 words.
Order from HB $5.90 HB-5355

Trans. of Tetsu to Hagane (Japan) 1961, v. 47, no. 10, p. 1346-1348.

DESCRIPTORS: *Furnaces, Oxygen, Water, *Cooling, Slags, Economics, Blast furnaces.

Skvortsov, A. A.
FORMATION OF A CONTINUOUSLY-CAST STEEL SLAB AND THE INCIDENCE OF SURFACE CRACKS. May 63, 3600 words.
Order from HB $9.80 HB-5347

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedenii]. Chern[aya] Met[allurgiya] (USSR) 1961, no. 7, p. 78-87.

DESCRIPTORS: *Steel, Castings, Surface properties, Tensile properties, Thermal stresses, Stresses, Friction, Fracture (Mechanics), Statics.

Tajiri, I., Sekino, S., and Sasaki, Y.
DETECTION OF FLAWS IN STEEL SHEET BY ULTRASONICS. May 63, 1500 words.
Order from HB $5.25 HB-5761

Trans. of Tetsu to Hagane (Japan) 1962, v. 48, no. 4, p. 515-517.

DESCRIPTORS: *Steel, Sheets, *Ultrasonic radiation, Metal plates, Metallurgical laboratories, Tests, Non-destructive testing.

Thews, Edmund R. and Stromeyer, Martin.
PROBLEMS OF THE USE OF CHEMICAL SALT FUSIONS IN THE SEPARATION OF HIGH-MELTING AND LOW-MELTING METALS. [1963] 19p.
Order from SLA $1.60 63-14822

Trans. of Chem[ische] Techn[ik] (East Germany) 1950, v. 2 [no. 5] p. 157-161.

DESCRIPTORS: Metals, *Material separation, Liquid metals, Powder metals, Heating, Oils, Anthracenes, *Fused materials, *Boron compounds, Salts, Furnaces

Previous processes for the separation of high-melting and low-melting metals in the shaking-screen and drum-sieve apparatuses for obtaining the white metal in the liquid or pulverulent state; separation by heating in paraffin, heavy oils, and anthracene; more recent experiments on the separation of the metals in salt fusions; and apparatus requirement.

Vinogradov, V. M.
AUTOMATIC CONTROL OF THE HEATING CYCLE IN THE STEELMAKING ARC FURNACE. May 63, 5700 words.
Order from HB $14.25 HB-5762

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedenii]. Chern[aya] Met[allurgiya] (USSR) 1961, no. 7, p. 180-194.

DESCRIPTORS: *Electric furnaces, Temperature control, Automatic, *Steel.

Vorontsova, T. V. and Morgunova, N. N.
FORGING MOLYBDENUM AND ALLOYS ON ITS BASE. 14 Feb 63 [12]p. 5 refs. FTD-TT-62-1789; AD-400 504.
Order from OTS or SLA $1.60 63-19678

Unedited rough draft trans. of Kuznechno-Shtampovochnoe Proizvodstvo (USSR) 1962 [v. 4] no. 8, p. 8-11.

DESCRIPTORS: *Molybdenum, *Forging, Molybdenum alloys, Tungsten alloys, Titanium alloys, Zirconium alloys, Oxides, Microstructure, Plasticity, Deformation, Hot working, Grain structures (Metallurgy), Fracture (Mechanics).

In order to determine experimentally the technological plasticity of cast alloys on molybdenum base, experiments were conducted on determination of critical breaking reduction ε_{max} at various temperatures. (Author)

Zayakin, B. I., Bigeev, A. M., and Uzienko, A. M.
SEGREGATION OF SULFUR IN LARGE RIMMED-STEEL INGOTS. May 63, 3100 words.
Order from HB $7.80 HB-5884

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedenii]. Chern[aya] Met[allurgiya] (USSR) 1962, no. 7, p. 62-70.

DESCRIPTORS: *Steel, *Sulfur, Castings, Microstructure, Molding, Distribution.

Zubov, V. Ya. and Krasil'nikov, L. A.
RELAXATION RESISTANCE OF 18-9 Ti STEEL WIRE. May 63, 1600 words.
Order from HB $4.70 HB-5957

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedenii]. Chern[aya] Met[allurgiya] (USSR) 1963 [v. 6] no. 4, p. 109-114.

DESCRIPTORS: Steel, *Wire, Titanium alloys, Carbon alloys, Chromium alloys, Nickel alloys, *Stainless steel, Tool steel, Tensile properties, *Fatigue (Mechanics), Stresses, Cold-working, Heat-treatment, Relaxation time.

Ferrous Metals

USSR INDUSTRIAL DEVELOPMENT: SOVIET FERROUS METALLURGY NO. 121. 28 May 63, 26p. JPRS: 19464.
Order from OTS $0.75 63-21944

Trans. of Referativnyi Sbornik. Ekonomika Promyshlennosti (USSR) 1963, no. 2, Svodnyi Tom, p. 105-106; and from Bakinskii Rabochii (USSR) 1963, 22 Feb; Pravda, Leningrad (USSR) 1963, 22 Feb; Pravda, Moscow (USSR) 1963, 24 Mar; Ekonomicheskaya Gazeta (USSR) 1963 [no. 11(84) p. 32].

DESCRIPTORS: *Industrial production, *Metallurgy, Ores (Metal sources), Industrial plants, Pipes, *Rolling mills, *Steel, *Iron.

Contents:
Requisites and necessity for the development of ferrous metallurgy in Kazakhstan on the base of c olitic ores, by M. S.
Elimination of operational deficiencies at the Azerbaidzhan pipe rolling plant, by I. Nabiev
The Cherepovets metallurgical plant, by A. Borodulin
Construction of cold rolled sheet shop at the Cherepovets metallurgical plant
Modernization of the Asha plant.

USSR INDUSTRIAL DEVELOPMENT: SOVIET FERROUS METALLURGY NO. 123. 10 June 63, 54p. JPRS: 19616.
Order from OTS $1.50 63-31014

Trans. of Byulleten' Tekhniko-Ekonomicheskoi Informatsii (USSR) 1963, no. 3, p. 3-9; and 9 selected articles from Mar-Apr 63 issues of 6 Russian newspapers.

DESCRIPTORS: *Industrial production, *Metallurgy, *Furnaces, *Steel smelting, Oxidation-reduction reactions, *Nickel alloys, Iron alloys, Stainless steel, Sheets, *Cladding, Plating, Steel industry, *Ores (Metal sources), *Mining engineering, Forging, Machine tools, *Rolling mills, *Earth handling equipment, *Iron.

Contents:
Oxygenation of ferronickel in a top-blown converter, by S. P. Kormilitsyn and others
Production of bimetals, by S. A. Golovanenko
GOSTs require improvement
Shortcomings in ore mining, by A. Koshel
Metal is needed for parts, by N. Razumov
Iron ore industry
The Urals' iron stream, by V. Svalov
Rational loading for rolling equipment, by L. Shapiro and V. Leporskii
Party care for converter method, by K. Nikolaev
A plant manufacturing plants, by S. Petrov
Planned cost of production, by N. Sandrigailo and others.

USSR INDUSTRIAL DEVELOPMENT: SOVIET FERROUS METALLURGY NO. 124. 11 June 63, 35p. JPRS: 19658.
Order from OTS $1.00 63-31036

Trans. of 20 selected articles from Mar-May 63 issues of 9 Russian newspapers.

DESCRIPTORS: *Industrial production, *Metallurgy, Industrial plants, Construction, *Pipes, *Welding, Smelting, *Iron, Furnaces, *Refractory materials, *Steel, *Rolling mills, Sintering, Furnaces, Ores (Metal sources), Electrical equipment, Steel industry, Alloys, Labor, Earth-handling equipment, Mining engineering.

Contents:
Evaluation of production output for first ten days of April
Achievements of the Chelyabinsk builders
Achievement and delays in construction in the Ural region
Construction of the second stage of a large diameter welded-pipe shop at the Novo-Moskovsk plant
Construction of electric pipe-welding shop at the Chelyabinsk pipe-welding plant
Achievement of workers at Serov metallurgical plant
Production at "Santekhlit" shop

Measures taken to correct shortcomings at "Yuzhuralmash" plant
Construction of the Zapadno-Sibirskiy metallurgical plant
Planning of shop specializing in production of refractories
Achievements at Zaporozhstal'
New 20-roll rolling mill
Planned new sintering mill
New pellet beneficiation mill
Accomplishments and shortcomings in construction of bessemer steel shops at Novo-Lipetsk metallurgical plant
New electrical equipment on sale
Help wanted ads
Description of operations at a plant specializing in the production of special alloys
Accomplishments of workers at Azovstal'
Shortcomings in the delivery of equipment to quarries for the assembling of equipment

Bernshtein, M. L. and Rakhshtadt, A. G.
PHYSICAL METALLURGY AND HEAT TREATMENT OF STEEL: CHAPS. 4, 32, 35-36. 2 May 63 [240]p. 313 refs. FTD-TT-62-1762.
Order from OTS or SLA $10.50 63-19673

Unedited rough draft trans. of mono. Metallovedenie i Termicheskaya Obrabotka Stali: Spravochnik [2d ed, v. 1] Moscow, 1961, p. 49-58, 592-597, 670-709.

DESCRIPTORS: *Metallography, Stresses, *Austenite, *Steel, *Heat treatment, Transformations, *Martensite, Theory, Hot-working, Quenching (Cooling), Microstructure.

Contents:
Methods of determining residual stresses
Formation of austenite in heating of steel
The martensitic transformations
Theory of tempering of quenched steel.

Grdina, Yu. V. and Sofroshenko, A. F.
METALLIC SURFACE IMPREGNATION OF STEEL FOLLOWED BY NITRIDING. May 63, 1900 words.
Order from HB $4.80 HB-5901

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedenii]. Chern[aya] Met[allurgiya] (USSR) 1963, [v. 6] no. 2, p. 115-119.

DESCRIPTORS: *Steel, Impregnation, Surfaces, Aluminum, Boron, Titanium, Silicon, *Hardening, Ammonia, Microstructure, Heat treatment, Temperature, Mechanical properties.

Kambara, K. and Fujita, K.
REDUCTION OF IRON OXIDE BY CARBON MONOXIDE + HYDROGEN GAS MIXTURES. May 63, 900 words.
Order from HB $3.40 HB-5945

Trans. of Tetsu to Hagane (Japan) 1960, v. 46, no. 10, p. 1136-1137.

DESCRIPTORS: *Iron compounds, *Oxides, Reduction (Chemistry), *Carbon compounds, *Monoxides, *Hydrogen, Gases, Steam, Ores (Metal sources), Smelting, Blast furnaces.

Kawai, M., Kimura, H., and Teramine, T.
REDUCTION OF FINE IRON OXIDE BY CARBON MONOXIDE, HYDROGEN AND C_3H_8 CRACKING GAS. May 63, 1100 words.
Order from HB $3.85 HB-5942

Trans. of Tetsu to Hagane (Japan) 1960, v. 46, no. 10, p. 1130-1132.

DESCRIPTORS: *Iron compounds, *Oxides, Reduction (Chemistry), *Powder metals, *Carbon compounds, *Monoxides, *Hydrogen, Hydrogen compounds, Gases, Temperature, *Propanes.

Lominskii, S. V.
NEW METHOD OF IMPROVING THE MACHINABILITY OF CAST STEEL. 6 May 63 [8]p. 6 refs. FTD-TT-63-352.
Order from OTS or SLA $1.10 63-19671

Unedited rough draft trans. of Akademiya Navuk BSSR [Minsk]. Doklady, 1962, v. 6, no. 6, p. 366-369.

DESCRIPTORS: *Steel, Castings, Sodium compounds, Sulfur compounds, Mechanical properties, *Machining.

It is shown that adding sodium sulfur to cast steel immediately before pouring it into molds is a very effective method of improving the machinability of steel castings.

Maehara, S., Morita, S., and Hirose, Y.
STUDY OF NITROGEN CONTENT OF STEEL IN A FIVE-TON YAWATA BASIC OXYGEN LD FURNACE. May 63, 900 words.
Order from HB $3.80 HB-5372

Trans. of Tetsu to Hagane (Japan) 1958, v. 44, no. 9, p. 1060-1062.

DESCRIPTORS: *Steel, *Nitrogen, Absorption, Oxygen, *Furnaces, Temperature.

Sato, R. and Taguchi, N.
REDUCTION OF IRON ORES BY A REFORMED MIXED GAS (NATURAL GAS AND CARBON DIOXIDE). May 63, 1300 words.
Order from HB $4.55 HB-5944

Trans. of Tetsu to Hagane (Japan) 1960, v. 46, no. 10 [p. 1134-1136].

DESCRIPTORS: *Iron, Ores (Metal sources), Reduction (Chemistry), Gases, Natural gas, Carbon compounds, Dioxides, Hydrocarbons, Catatysis.

Tumarev, A. S., Urazgil'deev, A. Kh., and Panyushin, L. A.
DESULFURIZATION OF STEEL BY INJECTION OF POWDERED REAGENTS. May 63, 3400 words.
Order from HB $9.50 HB-5886

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedenii]. Chern[aya] Met[allurgiya] (USSR) 1962, no. 7, p. 86-96.

DESCRIPTORS: *Steel, *Reagents, Powders, *Sulfur, Calcium compounds, Carbides, Oxides, Hydrides, Sodium compounds, Carbonates, Fluorspar, Magnesium compounds, Silicides, Manganese, Nitrogen, Oxygen, Carbon, Liquid metals. *Smelting.

Uno, T., Miyagawa, K., and Okigawa, K.
INVESTIGATION OF BED CHARGE SEGREGATION IN IRON-ORE SINTERING. May 63, 1300 words.
Order from HB $4.55 HB-5962

Trans. of Tetsu to Hagane (Japan) 1962, v. 48, no. 11, p. 1251-1252.

DESCRIPTORS: *Sintering, *Iron, Ores (Metal Sources), Coke, Sintering furnaces, Moisture, Magnetite.

Light Metals

Kantor, P. B., Krasovitskaya, R. M., and Kisel', A. N.
DÉTERMINATION DE L'ENTHALPIE ET DE LA CHALEUR SPÉCIFIQUE DU BÉRYLLIUM DANS L'INTERVALLE DE 600 A 2200°K (Opredelenie Ental'pii i Udel'noi Teploemkosti Berilliya v Intervale 600-2200°K) [Determining the Enthalpy and Spceific Heat Capacity of Beryllium in the Interval 600-2,200 K], tr. by Kahan. 10 Feb 62 [10]p. (foreign text included) 7 refs. CEA Trans. no. R 1490.
Order from OTS or SLA $1.10 63-15474

Trans. in French of #Fiz[ika] Metal[lov i] Metallo-ved[enie] (USSR) 1960, v. 10, no. 6, p. 835-837. An unedited rough draft trans. in English is available from OTS or SLA $1.10 as 61-27403, MCL-950, 27 June 61, [7]p.

DESCRIPTORS: *Beryllium, Enthalpy, Specific heat, Determination, Liquid metals. Calorimeters

Korneev, V. L. and Vernidub, I. I.
HIGH TEMPERATURE OXIDATION OF DISPERSED ALUMINUM. 21 Feb 63 [13]p. FTD-TT-62-1833; AD-299 653.
Order from OTS or SLA $1.60 63-19396

Unedited rough draft trans. of Issledovaniya po Zharoprochnym Splavam (USSR) 1961, v. 7, p. 309-316.

DESCRIPTORS: *Aluminum, *Oxidation, High temperature research, Powder metals, Oxygen.

The process of high temperature oxidation of aluminum powders is accompanied by fusion of the metal, its vaporization and subsequent reactions of the aluminum vapor mixture with oxygen in the gaseous phase. If the supply of heat to the drop of liquid aluminum is insufficient the process of the chemical interaction of aluminum with oxygen acquires a pulsating character and represents a series of successive flashes of aluminum vapor which periodically erupt into the reactor space through ruptures in the oxide film covering the drop. If the supply of heat to the liquid aluminum is sufficient (for example, in the case of preheating of the reagents) after the first rupture of the oxide film by the pressure of the metal vapors the surface of the drop of liquid aluminum is exposed which ensures continuous vaporization of the aluminum and the free escape of vapors into the reactor space. At a short distance from the surface of the liquid metal the aluminum vapors enter into a chemical reacton with the oxygen, which in this case proceeds continuously. The completeness of the reaction of aluminum powders with oxygen amounts to 37-56% and increases to 81-99% in the case of preheating the metal powder and oxygen to 400°. (Author)

Stroem, B. and Aronson, P. O.
FACTORS INFLUENCING THE COLOR UNIFORMITY OF ANODIZED ALUMINUM BUILDING PARTS. Paper presented at Internationale Leichtmetall Tagung (International Light Metals Conference) (no. 4) Leoben, 1961. [1962] 5p. (figs. omitted) 1 ref.
Order from SLA $1.10 63-10166

Trans. of Aluminium (West Germany) 1961 [v. 37] p. 204-205.

DESCRIPTORS: *Aluminum, *Buildings, *Panels (Structural), Colors, Electrodeposition, Oxides, Films, Reflection, Brightness, Coatings

Nonferrous (except light) Metals

USSR INDUSTRIAL DEVELOPMENT: SOVIET NONFERROUS METALLURGY NO. 64. 10 June 63, 36p. JPRS: 19608.
Order from OTS $0.75 63-31009

Trans. of Razvedka i Okhrana Nedr (USSR) 1963 [v. 29] no. 3, p. 8-23.

DESCRIPTORS: *Industrial production, *Metallurgy, *Talc, *Ores (Metal sources), Aluminum compounds, Hydroxides, *Geophysical prospecting, Geological survey, *Mining engineering, Mica, Pegmatite, *Beryllium, Rare earth elements.

Contents:
Commercial types of talc deposits in the USSR, by I. F. Romanovich
Bauxite-prospecting criteria and methods in the Turgai depression, by G. R. Kirpal'
Detector elements in the mica-bearing pegmatitic veins, by Yu. P. Smirnov
The hydrochemical method of prospecting for beryllium deposits, by A. I. Lisitsyn and S. I. Mormil'.

USSR INDUSTRIAL DEVELOPMENT: SOVIET NON-FERROUS METALLURGY NO. 65. 18 June 63, 18p JPRS: 19732.
Order from OTS $0.50 63-3106

Trans. of 8 selected articles from Apr-May 63 issues of 7 Russian newspapers.

DESCRIPTORS: *Industrial production, *Metallurgy, *Furnaces, Aluminum alloys, Platinum alloys, Separation, Catalysts, *Mica, *Copper, *Ores (Metal sources), *Carbides, *Chromium alloys, *Electric insulation, Oxygen, *Refactory materials.

Contents:
Waelz department converts tubular furnaces to oxygenated blasting
Use of alumo-platinum catalyzers
New mica deposits in Yakut ASSR
New copper ore deposits
The use of carbide-chromium alloys
Improvements in manufacture of electrical insulating materials needed, by M. Dubovik and V. Khanzhin
Production organization of refactory fire-resistant materials called for, by V. Peredereev
Advertisements.

Pisarenko, G. S. and Borisenko, V. O.
STUDYING THE HARDNESS OF TUNGSTEN AT TEMPERATURE RANGES OF FROM 20-2700°. 3 Apr 63 [8]p. 8 refs. FTD-TT-63-101. AD-402 600.
Order from OTS or SLA $1.10 63-19319

Unedited rough draft trans. of Akademiya Nauk URSR [Kiev]. Dopovidi, 1962, no. 8, p. 1053-1056.

DESCRIPTORS: *Tungsten, Hardness, High temperature research, Wire, Deformation, Annealing.

Thews, E. R.
MODERN REFINING METHODS FOR LEAD SCRAP AND BABBITT METAL SCRAP. [1962] 12p.
Order from SLA $1.60 63-10016

Trans. of Metall (West Germany) 1956, v. 10, no. 1/2, p. 16-20.

DESCRIPTORS: *Smelting, *Lead, Purification, Material separation, Refineries.

Structural Metallurgy and Corrosion

Akol'zin, P. A. and Mikhailova, N. M.
TREATMENT OF WATER WITH HYDRAZINE FOR THE PREVENTION OF CORROSION OF STEAM BOILERS. [1962] 14p. (figs. tables omitted) 7 refs.
Order from OTS or SLA $1.60 63-15141

Trans. of Teploenergetika (USSR) 1960 [v. 7] no. 7, p. 59-64.
Another trans. is available from OTS or SLA $1.60 as 63-15193, CE Trans-2634 [1962] [11]p.

DESCRIPTORS: *Boilers, Steam, *Corrosion inhibition, *Hydrazines, *Water, Feed water, Metals, *Corrosion.

The fundamental results of investigations on mastering the hydrazine treatment of water for the prevention of corrosion in steam boilers. (Author)

Gerasimov, V. V. and Gromova, A. I.
INVESTIGATION OF THE CORROSION STABILITY OF 12 XM (LOW-ALLOY) STEEL IN DISTILLED WATER AT 330° kg/cm^2. [1962] 10p. (figs. tables refs. omitted).
Order from OTS or SLA $1.10 63-15155

Trans. of Teploenergetika (USSR) 1960 [v. 7] no. 4, p. 42-47.

DESCRIPTORS: *Steel, *Corrosion inhibition, Water, Distillation, *Corrosion, Electrochemistry.

The method and results of an investigation of the mechanism of corrosion and corrosional stability of low-alloy steel 12 XM in water at high temperature and pressure are described. (Author)

Gerasimov, V. V., Gromova, A. I., and Moskvichev, G. S.
SOME ASPECTS OF THE THEORY OF CORROSION OF REACTOR MATERIALS IN CRITICAL-PARAMETER WATER (Nekotorye Voprosy Teorii Korrozii Reaktornykh Materialov v Vode Kriticheskikh Parametrov). [1962] 17p.
Order from OTS or SLA $1.60 AEC-tr-5405

Trans. of mono. International Atomic Energy Agency Conference on Corrosion of Reactor Materials, Salzburg, 4-9 June 62. [Proceedings] Paper CN-13/51.

DESCRIPTORS: *Reactor materials, *Corrosion, Theory, Water, Thermal neutrons, Neutron flux, Polarization, *Electrochemistry.

Mirkin, I. L. and Tseitlin, V. Z.
STRUCTURAL STATE AND HEAT RESISTANCE OF ALLOYS. 4 Mar 63 [17]p. 21 refs. FTD-TT-62-1756; AD-400 522.
Order from OTS or SLA $1.60 63-19682

Unedited rough draft trans. of #Metallovedenie i Termicheskaya Obrabotka Metallov (USSR) 1961, no. 2, p. 2-11.

DESCRIPTORS: *Metallography, *Heat resistant metals and alloys, Mechanical properties, Transformations, Grain structures (Metallurgy), Austenite, Peartite, *Steel, Ferrites, Iron alloys, Carbon alloys, Cobalt alloys, Nickel alloys, Chromium alloys, Carbides, Molybdenum alloys.

Rozenfel'd, I. L., Ol'khovnikov, Yu. P., and Sudarikova, A. A.
THE EFFECT OF COMPOSITION OF WATER ON CORROSION OF ZIRCONIUM ALLOYS AT HIGH TEMPERATURES AND PRESSURES (Vliyanie Sostava Vody na Korroziyu Tsirkonievykh Splavov pri Vysokikh Temperaturakh i Davleniyakh). [1962] 18p. 10 refs.
Order from OTS or SLA $1.60 AEC-tr-5374

Trans. of mono. [International Atomic Energy Agency] Conference on Corrosion of Reactor Materials, Salzburg, 4-9 June 62. [Proceedings] Paper CN-13/42.

DESCRIPTORS: *Reactor materials, Zirconium alloys, *Corrosion, Water, Purification, Corrosion inhibition, Oxidation, High temperature research

NUCLEAR PHYSICS AND NUCLEAR CHEMISTRY

THEMATIC PLAN OF PUBLICATIONS OF THE STATE PUBLISHING HOUSE OF LITERATURE IN THE FIELD OF ATOMIC SCIENCE AND TECHNOLOGY FOR THE YEAR 1962. [1963] 69p. 99 refs.
Order from OTS or SLA $6.60 AEC-tr-5243

Trans. of mono. Tematicheskii Plan Izdanii Gosudarstvennogo Izdatel'stva Literatury v Oblasti Atomnoi Nauki i Tekhniki po 1962 God, Moscow, 1961.

DESCRIPTORS: Bibliographies, *Nuclear physics, *Nuclear reactors, Reactor fuels, Reactor materials, Health physics, *Radiobiology, Radioactive isotopes.

Abstracts are given for the textbooks, reference works, popular scientific literature, and transactions of the Moscow Institute of Engineering Physics, dealing with various facets of nuclear science, planned for publication during 1962 by Gosatomizdat.

Kuchle, M.
MEASUREMENT OF NEUTRON TEMPERATURES IN GRAPHITE (Messung der Neutronentemperatur in Graphite). [1961] [19]p. 13 refs.
Order from SLA $1.60 61-10552

Trans. of Berichte der Reaktorgruppe [sic] 1956, no. 7, 21 June.

DESCRIPTORS: *Thermal neutrons, Temperature, *Graphite, Gold, Neutron absorbers, Indium, Foils, *Neutrons, Neutron absorption.

By activating an indium foil enclosed between gold absorbers, the neutron temperature was determined in various geometries of graphite in which a stationary neutron field is produced by two 500 mc Ra-Be sources. The neutron temperatures lie between 0° and 70° above the graphite temperature, which can be traced back to the incomplete thermal equilibrium. (Author)

Landau, L. D.
THE KINETIC EQUATION IN THE CASE OF THE COULOMB INTERACTION. [1963] 18p.
Order from OTS or SLA $1.60 63-14673

Trans. of [Zhurnal Eksperimental'noi i Teoreticheskoi Fiziki] (USSR) 1937, v. 7, no. 2, p. 203-209.

DESCRIPTORS: Dynamics, Equations, Charged particles, Nuclear scattering, Electrons, Ions, Plasma physics, *Kinetic theory, *Integral equations, Quantum statistics.

The kinetic equation is derived for a system of charged particles with consideration of their interaction. The order of magnitude is determined for the mean free path of the particles in such a system. The rate is calculated at which a plasma of electrons and ions reaches thermodynamic equilibrium. (Author)

Nesmeyanov, A. N.
THE HOT SYNTHESIS OF COMPOUNDS LABELED WITH TRITIUM AND C^{14} (Goryachii Sintez Mechenykh Tritiem i C^{14} Soedinenii). [1962] [23]p. 61 refs.
Order from OTS or SLA $2.60 AEC-tr-5082

Trans. of mono. Symposium [on the] Chemical Effects of Nuclear Transformations, Prague, 24-27 Oct 60. Proceedings, v. 2 [Vienna] 1961, p. 269-290.

DESCRIPTORS: Synthesis (Chemistry), *Labeled substances, *Tritium, *Carbon, Organic compounds, Nitrogen, Statistical data, Radioactive isotopes, Recoil atoms, *Radiochemistry.

The qualitative effect of the mechanism of recoil atom reactions on the yield of compounds labeled with tritium and C^{14} is investigated. Methods of introducing a hot atom into the parent molecule are presented: "hot", "ephithermal", and thermal reactions. Consideration is given to: the influence of radiolysis and grain size on the yield of tritium-labeled organic compounds; the irradiation of nitrogenous organic compounds in a nuclear reactor to obtain highly active substances; the effect of statistical law on the distribution of substitution products; and general behavior patterns due to the effects of temperature, phase, initial recoil energy, and of additions of different inert and inhibiting substances.

Patzak, W. and Vonach, H.
THE REACTIONS Al^{27} (n, α)Na^{24} AND Co^{59} (n, α)Mn^{56} WITH 14 MEV NEUTRONS (Die Reaktionen Al^{27} (n, α)Na^{24} und Co^{59} (n, Mn^{56} mit 14 Mev Neutronen) tr. by D. A. Sinclair. 1963, 13p. 21 refs. NRCC Technical Trans. 1071.
Order from NRCC $1.00 NRCC C-4427

Trans. of Nuclear Physics (Netherlands) 1962, v. 39, no. 2, p. 263-272.

DESCRIPTORS: *Nuclear reactions, *Aluminum, *Cobalt, Sodium, Manganese, Neutrons, Alpha particles, *Neutron reactions, Neutron beams, Neutron flux, Energy, Distribution

Popov, Yu. P. and Fenin, Yu. I.
ANALYSIS OF AVERAGE NEUTRON CAPTURE CROSS-SECTIONS. [1962] [20]p. 29 refs.
Order from OTS or SLA $1.60 AEC-tr-5569

Trans. of unidentified report from Joint Institute (for) Nuclear (Research) Dubna, 1962.

DESCRIPTORS: *Neutron capture, *Neutron cross sections, Nuclei, Nuclear physics, Analysis.

A discussion of the average radiation neutron capture cross-sections $\bar{\sigma}_\gamma$ in the kilovolt energy range.

Scheel, K. C.
RAPID DETERMINATION OF POTASSIUM IN POTASH SALTS BY RADIATION MEASUREMENT. [1963] [10]p. 13 refs.
Order from SLA $1.10 63-14615

Trans. of Angew[andte] Chem[ie] (West Germany) 1954, v. 66, no. 4, p. 102-106.

DESCRIPTORS: *Radiochemistry, *Potassium, Radioactive isotopes, Measurement, Potassium compounds, Hydroxides, Salts, Chemical analysis, Radiation measureing devices, *Beta counters, *Nuclear industrial applications.

Zharov, P. N.
METHODE RAPIDE DE DOSAGE DU RADIUM DANS LES EAUX (Uskorennyi Method Opredeleniya Radiya v Vodakh) [A Rapid Method for Radium Determination in Water] tr. by Vinogradoff. 15 Nov 62 [6]p. CEA Trans. no. R 1553.
Order from OTS or SLA $1.10 63-15499

Trans. in French of #Radiokhimiya (USSR) 1960 [v. 2] no. 5, p. 630-631.
Another trans. in French is available form OTS or SLA $1.10 as 62-13811, CEA-tr-R1391 [1961] [6]p.

DESCRIPTORS: Test Methods, *Water, *Contamination, *Radium.

Instruments and Installations

Susta, Bohumir.
METHOD OF ACCELERATING AN ELECTRON IN AN INDUCTION ACCELERATOR. 10 Apr 63 [6]p. FTD-TT-62-1787.
Order from OTS or SLA $1.10 63-19631

Unedited rough draft trans. of Czechoslovakian patent 97, 206, cl. 21g, 36, 15 Apr 60.

DESCRIPTORS: Electrons, Acceleration, *Electron accelerators, Inductance.

The invention involves a method of accelerating electrons in an induction accelerator, characterized by the fact, that in the role of space, in which the electrons are accelerated, are used rings from electrically conductive material. and that this material is cooled to a temperature at which supraconductive state is attained. The accelerating ring consists of carrier part on which is applied a layer of a material, which can be brought into supraconductive state, and on this layer is placed at least one disk, on which the falling electron originates gamma radiation. (Author)

Werner, Heinz.
AN ION SOURCE FOR PROTON-ACCELERATOR INJECTORS. 14 Mar 63 [6]p. FTD-TT-63-68.
Order from OTS or SLA $1.10 63-19204

Unedited rough draft trans. of Soviet patent 146, 891 (668451/26) 28 May 60.

DESCRIPTORS: *Proton accelerators, *Particle accelerator components, *Injectors, *Ion sources, *Electromagnetic lenses, Plasma physics.

The ion source for proton-accelerator injector with controllable compression of the plasma, equipped with a lens in the form of a permanent magnet, has the distinguishing characteristic that, a radially magnetized permanent magnet with a single air gap equipped with magnetic shunts, which regulate the magnetic field of the lens, has been used to increase both the reliability of source operation and the facility of regulation. (Author)

Nuclear Engineering and Power

INVESTIGATION OF BURNOUT IN BOILING WATER. Quarterly rept. no. 2, pt. 1 (technical pt.) 1 Jan-31 Mar 62, on Contract 057-61-RDD. [1963] 12p.
Order from OTS or SLA $1.60 EURAEC-303

Trans. of a rept. from Maschinenfabrik Augsburg-Nürnberg AG, Nuremberg (West Germany) 16 Apr 62.

DESCRIPTORS: *Boiling, *Water, *Test equipment, Pipes, Fluid flow, Power supplies, Thermocouples, Measurement, Design, Construction.

The basic construction of the high-pressure piping and apparatus for the experiment was concluded. The measurement sections for the round, inside-cooled tubes were constructed in detail. The project of the measurement installation for determining the density of wet steam mixtures at the inlet and outlet of the experimental loops by means of gamma ray attenuation was continued. Tests were carried out with various types of thermocouples, in a zero-pressure experimental assembly, in galvanic contact with the current-bearing, heated experimental loops. The results show that in the normal form they are not suitable for measurements of absolute wall temperatures. The first burnout detector on the basis of a bridge circuit was tested on the same experimental assembly. The results were satisfactory. (Author)

INVESTIGATION OF BURNOUT IN BOILING WATER. Quarterly rept. no. 3, pt. 1 (technical pt.) 1 Apr-30 June 62, on Contract 057-61 RDD. [1963] 7p.
Order from OTS or SLA $1.10 EURAEC-404

Trans. of a rept. from Maschinenfabrik Augsburg-Nürnberg AG, Nuremberg (West Germany) 30 June 62.

DESCRIPTORS: *Boiling, *Water, *Test equipment, Pipes, Thermocouples, Surface temperature, Measurement, Design, Construction.

The construction of the measurement sections and mock-ups was continued and the current supply planned for the measurement section was tested at 320 atm. and 20°C. Preliminary tests were commenced for the trial of a double thermocouple. For the analysis of the available experimental results, a program was drawn up for the IBM 1620 for computing dimensionless characteristic quantities and various experimental data were prepared for the calculation. (Author)
(See also EURAEC-303)

REPROCESSING OF IRRADIATED FUELS. Quarterly rept. 5 (2d yr.) 1 Apr-30 June 62, on Contract 049-61-4 RDB. [1963] 26p.
Order from OTS or SLA $2.60 EURAEC-382

Trans. of a rept. from Centre d'Étude de l'Énergie Nucléaire, Mol (Belgium) n.d.

DESCRIPTORS: *Reactor fuel processing, *Chlorination, *Reaction kinetics, *Fission products, Powders, *Powder metallurgy, *Uranium compounds *Fluorides, Distillation, *Plutonium.

Contents:
Chloridization, by P. Speeckaert and others
Kinetics, by A. Burkholz and others
Elimination of fission products, by C. Pierini and R. Harnie
Powder technology, by R. Heremans and others
Distillation of UF_6, by G. Pierini and J. Trine
Plutonium, by G. Camozzo and others.

SOVIET NUCLEAR RESEARCH REACTORS OF THE IRT-2000 TYPE: REVIEW OF SOVIET LITERATURE. Rept. no. 6 on Soviet Reactors. 30 Apr 63 [37]p. 19 refs. AID rept. P-63-53. AD-403 811.
Order from OTS or SLA $3.60 63-19350

DESCRIPTORS: *Nuclear reactors, *Research reactors, Reviews, Design, Reactor lattice parameters.

Contents:
Foreward
The IRT-2000 reactors: background
I. The Moscow IRT-2000 reactor
II. The Salaspils IRT-2000 reactor
III. The Tbilisi IRT-2000 reactor
IV. The Tomsk IRT-2000 reactor
V. The Sverdlovsk IRT-2000 reactor
VI. The Malye Dubny IRT-2000 reactor.

PHYSICS

ABSTRACTS PERTAINING TO COMMUNIST CHINA IN SOVIET ABSTRACTS JOURNALS NO. 73 (PHYSICS SERIES). 11 June 63, 3p. JPRS: 19644.
Order from OTS $0.50 63-31028

Trans. of selected abstracts from Referativnyi Zhurnal. Fizika (USSR) 1962, no. 9.

DESCRIPTORS: *Abstracts, *Physics, Nuclear resonance, Liquids, Gases, Solid state physics, *China, Semiconductors.

ACTA PHYSICA SINICA, 1959, VOL. 15, NOS. 2-3, 5, 7-12: TABLES OF CONTENTS AND SELECTED ABSTRACTS, tr. by N. H. Ng. Chinese (Mainland) Science and Technology Journals: Translated Table of Contents, Physics 1, on Contract AF 19(604)8505. June 62 [46]p. Emmanuel Coll. Research Language Center rept. no. Phys. 1.
Order from OTS or SLA $4.60 62-33220

Trans. of table of contents and selected abstracts of Wu Li Hsüeh Pao (Chinese People's Republic) 1959, v. 15, nos. 2-3, 5, 7-12.

DESCRIPTORS: *Abstracts, *China, *Physics, Photons, *Radioactive decay, Hyperons, Mesons, Circuits, Colloids, Crystal growth, Strange particles, *Nuclear properties, *Nuclear reactions, Internal friction, Storage tubes, Waveguide couplers, Zone melting, Gallium, Fluorine, Electromagnetism, Surface tension, Transistors, Nucleons, Electron beams, Piezoelectric crystals, Nonlinear systems, *Nuclear physics, Propagation, Wave transmission, Mathematical analysis, Solutions, Photographic emulsions, Nuclear spins, Meson capture, Nuclear structure, Inertia, V particles, *Elementary particles.

ACTA PHYSICA SINICA, 1960, VOL. 16, NOS. 2, 4-7 [AND] 1961, VOL. 17, NOS. 1-2: TABLE OF CONTENTS AND SELECTED ABSTRACTS, tr. by N. H. Ng. Chinese (Mainland) Science and Technology Journals: Translated Table of Contents, Physics 2, on Contract AF 19(604)8505. June 62 [42]p Emmanuel Coll. Research Language Center rept. no Phys. 2.
Order from OTS or SLA $4.60 62-33217

Trans. of table of contents and selected abstracts of Wu Li Hsüeh Pao (Chinese People's Republic) 1960, v. 16, nos. 2, 4-7; 1961, v. 17, nos. 1-2.

DESCRIPTORS: *Abstracts, *China, *Physics, Strange particles, Nuclear properties, Muons, Helium, Nuclei, *Nuclear scattering, Epoxy plastics, Anhydrites, *Decay schemes, Silver, Dielectrics, *Optics, Radioactive decay, Single crystals, Rare earth compounds, Oxides, Yttrium, Ytterbium, Garnet, Ferromagnetism, Plasma physics, Thermodynamics, Polarization, Speech transmission, Superconductivity, Nuclear physics, *Nuclear reactions, Meson capture, Proton scattering, Elastic scattering.

UKRAINIAN JOURNAL OF PHYSICS, 1962, VOL. 7 NO. 1: SELECTED ARTICLES. 4 Apr 63 [18]p. 11 refs. FTD-TT-63-88. AD-402 587.
Order from OTS or SLA $1.60 63-19318

Unedited rough draft trans. of Ukrayins'kyi Fizychnyi Zhurnal (USSR) 1962, v. 7, no. 1, p. 73-74, 79-81, 83-86.

DESCRIPTORS: *Physics, Electronics, *Vacuum apparatus, *Electron bombardment, Chromium, Electron tubes, Gases, *Adsorption, Tungsten, Surface properties, Mass spectroscopy, Magnetic fields, *Electron beams, Plasma physics, *Plasma oscillations, Electrostatics, Doppler effect, Statistical functions.

Contents:
Obtainment of ultrahigh vacuum with the aid of chromium dispersed by electron bombardment, by G. S. Mikhailov and others
Certain characteristics of partial adsorption of components of residual gases at very high vacuum, II, by Yu. G. Ptushinskii, and B. O. Chuykov
Effect of electrostatic instabilities on the function of distribution of the beam, which reacts with plasma in magnetic field, by V. D. Shapiro and V. I. Shevchenko.

Fok, V. A.
PROPAGATION OF THE DIRECT WAVE AROUND THE EARTH WITH DUE ACCOUNT FOR DIFFRACTION AND REFRACTION. 9 Jan 50, 28p.
Order from OTS or SLA $2.60 63-14420

Trans. from Akademiya Nauk SSSR. Izvestiya. Seriya Fizicheskaya, 1948, v. 12, no. 2.

DESCRIPTORS: *Radio waves, *Propagation, *Diffraction, *Refraction, Partial differential equations, Functions, Electromagnetic waves, Ionospheric propagation, *Numerical analysis.

Reikhrudel', E. M. and Smirnitskaya, G. V.
IONIZATION METHODS OF OBTAINING HIGH VACUUM. 12 Mar 63 [11]p. 8 refs. FTD-TT-62-1914; AD-402 467.
Order from OTS or SLA $1.60 63-19572

Unedited rough draft trans. of Priroda (USSR) 1957 [v. 46] no. 9, p. 87-91.

DESCRIPTORS: Ionization, Vacuum apparatus, Vacuum pumps, Ions, Pumps, *Gas ionization, Electric discharges, Discharge tubes, Reviews.

A state-of-the-art review.

Vasil'ev, M. [V.] and Stanyukovich, K. [P.]
THERE ARE SEVEN ELEMENTS IN THE WORLD. 20 Feb 63 [280]p. FTD-TT-62-960; AD-298 778.
Order from OTS or SLA $17.50 63-19324

Unedited rough draft trans. of mono. V Mire Semi Stikhii, Moscow, 1961, 255p.

DESCRIPTORS: *Solids, *Liquids, *Gases, *Plasma physics, *Gravity, *Electromagnetic fields, *Nuclear forces, Vacuum systems, Power supplies, *Stars, *Relativity theory, *Space flight, *Rocket propulsion, *Fluid dynamics, *Shock waves, *Novae, *Interstellar matter, *Explosives, *Celestial mechanics, *Solar systems, *Galaxies.

The book deals with the universe and the laws governing the seven basic elements of the universe, which to date are known to man; the book also covers the hypotheses which man has offered, but which are in need of verification, and there is also a discussion of the means to be employed in the conquest of the universe, means which farsighted scientists are planning today. The book will familiarize the reader with hydro- and gasdynamics, the theory of explosions, and the dynamics of fields. Such problems as the mastery of supersonic speeds, flight beyond the atmosphere, the construction of a photon rocket, and interstellar flights are elucidated. An attempt is made to answer some of the most interesting questions: is it possible to attain a speed greater than the velocity of light; was Einstein right in everything; is there a fourth dimension; how old are the atoms - as well as many other questions that have been put before scientists with respect to matter and energy. The reader is likely to encounter pages here in which the authors enter into the realm of hypotheses and scientific assumptions that have not yet found general acceptance.

Acoustics

Kalmakov, V. A. and Abrosov, A. I.
DESIGNING INSTRUMENTS FOR MEASUREMENTS OF SONIC PRESSURE. 8 Apr 63 [14]p. 3 refs. FTD-TT-62-1892.
Order from OTS or SLA $1.60 63-19402

Unedited rough draft trans. of mono. Primenenie Ul'traakustiki k Issledovaniyu Veshchestva, Moscow, 1961, p. 129-138.

DESCRIPTORS: *Ultrasonics, Pressure, *Acoustic detectors, Design, *Transducers (Acoustic), *Amplifiers, Calibration, Nomograms.

A description is given of an acoustical probe, AZ-2, designed to determine sonic pressure in gases and liquids. It consists of an electronic amplifier and three spherical pressure receptors 5, 10, and 15 mm in diameter which are alternately hooked up to the amplifier. The amplifier serves to amplify the signal coming from the receptor to a value large enough to be registered on standard measuring instruments produced by domestic industry: vacuum tube voltmeters, frequency meters, and oscilloscopes. The AZ-2 is designed for measurement in a medium with a temperature from +10 to +35°C. The medium being investigated may be any gas, water, transformer oil, or weak solutions of acids and alkali.

Novikov, S. S. and Ryazantsev, Yu. S.
ACOUSTIC CONDUCTIVITY OF A RIGID BURNING SURFACE [Akusticheskaya Provodimost' Zhestkoi Goryashchei Poverkhnosti]. 18 Mar 63 [11]p. 17 refs. FTD-TT-62-1690. AD-402 463
Order from OTS or SLA $1.60 63-19517

Unedited rough draft trans. of Zhurnal Prikladnoi Mekhaniki i Tekhnicheskoi Fiziki (USSR) 1961, no. 6, p. 73-77.
Another trans. is available from OTS or SLA $1.60 as 62-20004 [1962] 11p.

DESCRIPTORS: *Acoustic properties, Acoustics, *Conductivity, *Combustion, Surfaces, Perturbation theory.

Electricity and Magnetism

NON-UNIFORM MOTIONS OF CHARGE WITHOUT ACCOMPANYING MAGNETIC OR RADIATION FIELDS. [1963] 3p.
Order from SLA $1.10 63-14410

Trans. of Physikalische Zeitschrift (Germany) 1910, v. 11, p. 708-709 (reproduced in mono. Ehrenfest, Paul: Collected Scientific Papers, pub. Interscience Publishers, Inc., New York, 1959).

DESCRIPTORS: *Oscillation, Motion, Electric currents, *Electric properties.

TRACKING DISCHARGE PROBLEMS IN SYNTHETIC MATERIALS. [1963] 3p. (figs. omitted).
Order from SLA $1.10 63-14828

Trans. of article from an unidentified source, n.d.

DESCRIPTORS: *Electrical discharges, Sparks, Tracking, *Electric insulation, Degradation.

Braude, A. A.
SOME SPECIAL MEASUREMENTS OF MAGNETIC DENSITY. 20 Feb 63 [20]p. 7 refs. FTD-TT-63-1; AD-299 651.
Order from OTS or SLA $1.60 63-19186

Trans. of #Fizika Metallov i Metallovedenie (USSR) 1962, v. 13, no. 6, p. 832-841.

DESCRIPTORS: *Ferromagnetic materials, Magnetic properties, *Density, Measurement, *Measuring devices (Electrical and electronic), *Ballistic galvanometers, *Creep.

A method is described for measuring magnetic density with a ballistic galvanometer by means of the action of a variable field on the ferromagnetic specimen. The parameters of the experimental setup and the examples of the method's use in investigating ideal curves of magnetization and the effect of creep are presented. (Author)

Döring, W. and Simon, G.
THE DIRECTIONAL DEPENDENCE OF MAGNETOSTRICTION (Die Richtungsabhangigkeit der Magnetostriktion). [1963] [32]p. (foreign text included) 8 refs.
Order from SLA $3.60 63-14927

Trans. of Ann[alen der] Phys[ik] (East Germany) 1960 [ser. 7] v. 5, no. 7/8, p. 373-387.

DESCRIPTORS: *Magnetostriction, *Single crystals, Crystal lattices, Symmetry (Crystallography), Functions, Tensor analysis, Magnetic properties.

In a single crystal the magnetostriction can be expressed by means of a second order tensor, the components of which depend on the magnetization direction. With the aid of group-theory method, this dependence is expressed for all crystals in such a form that the symetry of the crystals will suffice for it. The results can be applied not only to magnetostriction but also to the resistance of magnetized single crystals in the theory of lattice vibration. (Author)

Franke, Walter and Katz, Helmut.
PARAMAGNETISM OF THE SYSTEM SODIUM MERCURY. [1963] 4p. 11 refs.
Order from SLA $1.10 63-14811

Trans. of Z[eitschrift für] Anorg[anische und] Allgem[eine] Chem[ie] (Germany) 1937, v. 231, p. 63-65.

DESCRIPTORS: *Sodium alloys, *Mercury alloys, *Paramagnetism, Magnetic susceptibility, Determination

Klein, S.
THE DIRECT CONVERSION OF THERMAL ENERGY INTO ELECTRICAL ENERGY. [1963] [21]p. (foreign text included) 2 refs.
Order from SLA $2.60 63-14377

Trans. of International Conference on Ionization Phenomena in Gases (no. 5) Munich, 1961. Proceedings, p. 806-814.

DESCRIPTORS: *Energy conversion, *Thermoelectricity, Ionization, Vapors, Mercury, Electrodes, Temperature, Tests, Measurement, *Electricity

We have been able to establish an important separation of positive and negative electric charges in a jet of ionized vapour, metallic or otherwise (mercury, cesium and water) which tends to condense at room temperature. These pressurized vapours, ionized by an H. F. source, enter through a vent into an expansion chamber which contains several electrodes and in which a partial vacuum has been set up. These vapours, made up of molecules, ions and electrons, traverse the vent and the electrodes and expand at different velocity and an electro-motive force is produced between the electrodes. Also, similar results have been obtained by using other ionization processes (flame, ultra-violet light, radio-active elements). The voltage distribution in the hot gas in relation to the electrodes has been measured by means of small wire electrodes. The separation of electrical charges has been obtained without applying an electrical or magnetic field in the vicinity of the electrodes. The difference of temperature between the electrodes plays as essential part in this phenomenon. It the electrodes are at the same temperature, no electro-motive force is produced. (Author)

Klein, Siegfried.
ELECTRICITY: ON AN EFFECT OF DIRECT CONVERSION OF HEAT TO ELECTRICITY (Electricité - Sur un Effet de Conversion Directe de la Chaleur en Électricité). [1963] [5]p. (foreign text included) 3 refs.
Order from SLA $1.10 63-14376

Trans. of Academie des Sciences [Paris]. Comptes Rendus (France) 1962. v. 254, no. 1, p. 1946-1947 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Electricity, *Energy conversion, Ionization, Vapors, *Thermoelectricity.

Lifshits, I. M. and Kosevich, A. M.
THEORY OF THE de HAAS - van ALPHEN EFFECT FOR PARTICLES WITH AN ARBITRARY DISPERSION LAW. 1960, 6p. 18 refs. TL 1562: M2'78.
Order from OTS or SLA $1.10 61-13673

Trans. of [Akademiya Nauk SSSR]. Doklady, 1954, v. 96 [no. 5] p. 963-[966].

DESCRIPTORS: *Field theory, Magnetic fields, Temperature, Metals, Magnetic susceptibility.

An attempt is made to determine the extent to which quantum theory can be used to explain the periodical dependence of magnetic susceptibility on the magnetic field at low temperatures.

Savitskii, E. M., Sol'ts, V. A., and Tylkina, M. A.
THE EFFECT OF RHENIUM ON THE PROPERTIES OF A COBALT-CHROMIUM-NICKEL-ALLOY.
5 Feb 63 [10]p. 8 refs. FTD-TT-62-1840.
Order from OTS or SLA $1.10 63-19400

Unedited rough draft trans. of #Metallovedenie i Termicheskaya Obrabotka Metallov (USSR) 1962, no. 6, p. 10-13.

DESCRIPTORS: *Rhenium, Rhenium alloys, *Cobalt alloys, *Chronium alloys, *Nickel alloys, Microstructure, Hardness, Deformation, Tensile properties, Corrosion-resistant alloys, Magnetic properties, *Measuring devices (Electrical and electronic).

Alloying the K40NKhM alloy with rhenium increases its durability characteristics without decreasing its deformability. An alloy alloyed with rhenium remains nonmagnetic and corrosion-resistant. Rhenium, in quantities up to 10% goes into a multicomponent solid solution on a cobalt base. The introduction of 7-10% Re into an alloy allows one to obtain, on a cold-drawn wire after aging, hardness RC 60-64 and tensile strength 260-280 kg/mm^2. 'Author)

Shpigel', I. S., Raizer, M. D., and Myae, E. A.
INSTRUMENT FOR RELATIVE MEASUREMENTS OF DIRECT MAGNETIC FIELDS. [1962] 9p. 3 refs.
MDF S-127.
Order from OTS or SLA $1.10 62-23022

Trans of Radiotekh[nika] i Elektr[onika] (USSR) 1956, v. 1, no. 12, p. 1515-1519.

DESCRIPTORS: *Magnetic fields, Measurement, *Nuclear magnetic resonance, *Resonance absorption, *Magnetometers, Circuits,

An instrument is described which uses the phenomenon of nuclear magnetic resonance absorption for the relative measurements of weak inhomogeneous fields. The instrument contains an automatic trimming circuit The maximum magnitude of the difference in the magnetic field intensities which is measurable is $\Delta H_{max} = \pm 5$ percent of the field to be measured. The measurement accuracy is $\pm(3\text{-}4)$ percent of ΔH Measurements were performed at $H_0 = 150$ Oe (Author)

Strecker, F.
INFLUENCING THE CURVE SHAPE OF PHENOMENA BY DAMPING- AND PHASE-DISTORTIONS (Beeinflussung der Kurvenform von Vorgangen durch Dampfungs-und Phasenverzerrung). [1963] [52]p. (formulae tables omitted) 8 refs.
Order from SLA $5.60 63-14015

Trans. of Elektrische Nachrichten-Technik (Germany) 1940, v. 17, May, p. 93-107.

DESCRIPTORS: *Damping, *Phase distortion, Transients, Curve fitting, Series, *Fourier analysis.

The transmission properties of a system are expressed by its running time spectrum. For a limited transmission range, this can be achieved by the expansion of the complex transmission factor into Fourier series, which can be always numerically done according to known methods. The running time spectrum consists of separate lines indicating with what intensity and delay separate undistorted phenomena arrive and form at the output the distorted phenomenon. It is also possible to begin with a Fourier series of the transmission factor divided or multiplied by the whole exponent of the frequency and the result is a similar structure of the distorted sign consisting of part-phenomena. A numerical calculation with the aid of a three-coil circuit as example coincides well with the strict solution. By reversing the method, it can be shown that the amplitude factor and the phase angle should depend on frequency provided the transient phenomenon in low pass pendulates only slightly before and after the rise. (Author)

Wunsch, G.
THEORY AND PRACTICAL CALCULATION OF TWO-PHASE NETWORKS, PTS. I-II [1963] [35]p. 6 refs.
Order from SLA $3.60 63-14663

Trans. of Nachrichtentechnik (German Democratic Republic) 1957, v. 7, no. 5, p. 200-205 and 1958, v. 8, no. 4, p. 154-158.

DESCRIPTORS: *Electrical networks, Networks, Circuits, *Phase measurement, Sidebands, Amplitude modulation, *Numerical analysis, Theory.

The calculation of a network yielding two output voltages shifted by the phase angles $\frac{\pi}{2}$ at two output terminals is given. The network consists of all-passes with strict consideration of all losses in the circuit elements. The constant phase difference of the value $\frac{\pi}{2}$ required is approximated in a given frequency range by means of elliptical functions in Chebyshev's sense. The approximation method is explained by using a known physical interpretation before beginning the calculation. In the past few years, these networks have become important in certain problems of single sideband modulation. (Author)

Electronics

Berraz, G. and Virasoro, E.
THALLOUS SULFIDE PHOTOCELLS, DESIGN AND CHARACTERISTICS. [1963] [29]p. (refs. omitted).
Order from SLA $2.60 63-14404

Trans. from [Universidad Nacional del Litoral]. Instituto de Investigaciones Cientificas y Technologicas. Anales (Argentina) n.d.

DESCRIPTORS: *Photoelectric cells (Semiconductor), *Thallium compounds, *Sulfides, Design, Photoconductivity, Electrodes, Electrodeposition, Infrared photoelectric cells, Sensitivity.

Shchukin, A. [N.].
THE EFFECT OF FLUCTUATION INTERFERENCE ON THE ACCURACY OF DETERMINING COORDINATES BY RADIO-ENGINEERING METHODS. [1962] 35p.
Order from OTS or SLA $3.60 63-10253

Trans of mono. [100 Let so Daya Rozhdeniya A. S. Popova, Yubileinaya Sessiya] (One Hundred Years after the Birth of A. S. Popov, Jubilee Edition) [Moscow] 1960, p. 5-28.

DESCRIPTORS: *Position finding, *Direction finding, Velocity, *Radio equipment, *Radio navigation, *Oscillation, *Radio interference, Errors, Radio waves, Radio signals, Noise (Radio), Phase measurement, Signal-to-noise ratio, Probability.

The effect of fluctuation interference on the accuracy of determining angular coordinates and distance, with various technical methods of solving these problems and the effect of the signal from the object itself on the accuracy of determining the coordinates of fluctuations are examined. Given also is an evaluation of the probability of locating an object in a given extent of space, proceeding from the level of fluctuation interference and resolving capacity of measuring devices. (Author)

Syrovoi, V. A.
INVARIANT GROUP SOLUTIONS OF THE EQUATIONS OF A PLANAR STATIONARY BEAM OF CHARGED PARTICLES. 5 Feb 63 [23]p. 22 refs.
FTD-TT-62-1810; AD-299 674.
Order from OTS or SLA $2.60 63-19178

Unedited rough draft trans. of Zhurnal Prikladnoi Mekhaniki i Tekhnicheskoi Fiziki (USSR) 1962, no. 4, p. 10-20.

DESCRIPTORS: *Plasma physics, *Particle beams, *Charged particles, Equations, Groups (Mathematics), *Electromagnetic lenses, Electrodes, Focusing.

Investigated are the group properties of the equations of a beam in the absence of an external magnetic field and in a given external magnetic field. (Author)

Molecular Physics and Spectroscopy

Corbino, O. M.
FROM THE PHYSICS OF THE ATOM TO THE PHYSICS OF THE MOLECULE. Apr 60 [19]p.
Order from SLA $1.60 63-14696

Trans. of Elettrotecnica (Italy) 1933, v. 20, no. 6, p. 118-121.

DESCRIPTORS: *Quantum mechanics, Atomic structure, *Molecular structure, Theory, *Atomic orbitals, Spin, Atomic energy levels, Special functions.

Freymann, René.
ON THE INFRARED FREQUENCIES AND RAMAN CHARACTERISTICS OF THE OH GROUP LIQUIDS: EXISTENCE OF THREE TYPES OF V(OH) BANDS. [1963] 10p. (figs. omitted) 3 refs.
Order from SLA $1.10 63-14238

Trans. of Cahiers de Physique (France) 1942, v. 9, p. 1-15.

DESCRIPTORS: *Infrared spectroscopy, *Raman spectroscopy, *Chemical bonds, Hydroxides, Hydrogen, Frequency, V band, S band, Liquids, Nitro acid, Sulfuric acid, Phosphoric acid, Hydrochloric acid, Glycerols, Glycols.

Krause [Erich] and Grosse [Aristid von].
EXISTENCE AND STABILITY OF THE ELEMENTARY ALKYLS. 24 Feb 42, 3p. (tables omitted).
Order from SLA $1.10 63-14835

Partial trans. (excerpts) from mono. [Die Chemie der Metalloorganischen Verbindungen, Berlin, 1938] p. 736-745.

DESCRIPTORS: *Metalorganic compounds, *Alkyl radicals, Stability, *Chemical bonds, Atomic orbitals, Molecular structure, Theory.

Mecke, Reinhard.
THE INSTITUTE'S INVESTIGATIONS ON THE HYDROGEN BOND. [1963] 15p. 26 refs.
Order from SLA $1.60 63-14839

Trans. of mono. (report) of Freiburg U., Physical-Chemical Institute, Breisgau, n.d.

DESCRIPTORS: *Chemical bonds, Hydrogen, *Molecular association, Heat of formation, Absorption spectrum, *Infrared spectroscopy, Electrical conductance, *Electric moments, Dipole moments, Spectra (Infrared)

Rousset, August; Lochet, Robert, and Dubarry, Jean-Louis.
MOLECULAR PHOSPHORESCENCE AT THE TEMPERATURE OF LIQUID NITROGEN: VIBRATION STRUCTURE OF SEVERAL AROMATIC AND HETEROCYCLIC DERIVATIVES. [1963] [7]p. 7 refs.
Order from SLA $1.10 63-14493

Trans. of [Academie des Sciences, Paris]. Comptes Rendus (France) 1959, v. 248, no. 1, p. 54-57. (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Low temperature research, *Phosphorescence, Spectrographic analysis, Benzene derivatives, Heterocyclic compounds, *Naphthalenes, *Phenanthrenes, *Chrysenes, *Anthracenes, *Diphenyl, *Fluorine, *Carbazoles, *Indoles, *Benzophenones, *Quinones, Anthrones, *Pyrenes, Molecular properties.

Salikhov, S. G.
PARAMAGNETIC RESONANCE ABSORPTION IN RARE-EARTH METALS AT CENTIMETER WAVES [Rezonansnoe Paramignitoe Pogloshchenie Redkozemel'nykh Metallakh na Santimetrovykh Volnakh]. [1961] 9p. 16 refs. MDF S-100.
Order from OTS or SLA $1.10 62-23007

Trans. of Zh[urnal] Eksperimental'noi] i Teor[eticheskoi] Fiz[iki] (USSR) 1954, v. 26, no. 4, p. 446-453.

DESCRIPTORS: *Paramagnetic resonance, *Resonance absorption, Absorption spectrum, *Rare earth elements, *Cerium, *Praesodymium, *Neodymium, Magnetic properties.

There are produced results of measuring the paramagnetic resonance absorption in rare-earth metals (cerium, praesidium, neodymium) at 290°K and 90°K and at the frequency $\nu = 9.378 \cdot 10^9$ cps. The experimental curves obtained permitted computation of the spectroscoping splitting factors, line widths and spin relaxation time. There is established, experimentally, the effect of the temperature on the shape of the absorption lines. (Author)

Optics

Antonov-Romanovskii, V. V.
EMISSION STIMULATING ACTION OF THE EXCITING LIGHT IN PHOSPHORS [AND] CRITIQUE (Vysvechivayushchee Deistvie Vozbuzhdayushchego Sveta v Fosforakh) tr. by Sergey Shewchuck. Aug 62 [26]p. (foreign text included) 6 refs.
Order from OTS or SLA $2.60 UCRL Trans-854 (L)

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Fizicheskaya, 1949, v. 13, no. 1, p. 91-100.

DESCRIPTORS: *Phosphors, *Light, *Excitation, Stimulation, *Photoelectric effect, Optical phenomena, Zinc compounds, Alkaline earths, Silicates.

A series of cases in which the stoppage of growth of the light sum in phosphors is such that the factor which hinders the further accumulation of the light sum appear appears to be the extinguishing action of the exciting light itself. The behavior characteristics of phosphors during intense excitation are described. Results of experiments with silicate, alkaline-earth, and zinc phosphors are presented. Data indicated that the limiting concentration of the stored light sum is a function fo the wavelength of the exciting light. The spectral region of the extinguishing action in general overlaps the spectral region of excitation. (AEC abstract)

Aricescu, Ioana and Grigorovici, Radu.
AN APPARATUS FOR TRICHROMATIC COLORIMETRY ADAPTABLE TO PULFRICH'S PHOTOMETER. [1963] [17]p. 4 refs.
Order from SLA $1.60 63-14494

Trans. of Academia Republicii Populare Romine. Buletin Stiintific. Sectia de Stiinte Matematice si Fizice (Rumania) 1952, v. 4, no. 3, p. 617-627. Another trans. is available from SLA mi$2.40, ph$3.30 as 59-15993 [1959] 14p.

DESCRIPTORS: *Colorimetry, *Photometers, Colors, Design, Light, Mathematical analysis.

An apparatus for trichromatic colorimetry adaptable to Pulfrich's photometer is described. It consists of a mosaic of three color filters. Its image is formed in the plane of one of the two diaphragms of the photometer. The other diaphragm is illuminated by the light to be measured. The color mixture occurs at the retina. The variation in the quantities of red, green and blue light is produced by shifting the mosaic in two directions perpendicular to each other. The balance of the brightness is obtained by varying the diaphragm corresponding to the color to be measured. Equations for the calculation of the trichromatic coefficients and of the total factor of transmission or reflection, with or without desaturation, are derived. (Author)

Berger, Anni and Koch, Otto.
A FEW REMARKS CONCERNING COLOR MEASUREMENTS ON FLUORESCENT SAMPLES. [1963] 5p. (formulae refs. omitted).
Order from SLA $1.10 63-16338

Trans. of die Farbe (West Germany) 1960, v. 9, no. 4/6, p. 259-266.

DESCRIPTORS: *Fluorescence, Dyes, Textiles, *Colorimetry, Spectrophotometers, *Xenon lamps.

Bykov, V. P.
INTRAMOLECULAR ENERGY TRANSFER AND LASERS (Vnutrimolekulyarnyi Perenos Energii i Kvantovye Generatory). 6 May 63 [4]p. 3 refs.
AID rept. T-63-57.
Order from OTS or SLA $1.10 63-19349

Trans. of #Zhurnal Eksperimental'noi i Teoreticheskoi Fiziki (USSR) 1962, v. 43, no. 6, p. 2313-2315

DESCRIPTORS: *Lasers, Energy, Molecules, Excitation, *Luminescence, Electron transitions, Rare earth elements.

The phenomenon of intramolecular energy transfer allows us to reconsider materials which previously have been thought to be unpromising for use in lasers. The utilization of this principle affords us the opportunity to create lasers more effective than the ruby laser and also to expand the range of generated wave wavelengths. (Author)

Engel, Fritz.
HEATING POLARIZATION MICROSCOPE FOR THE STUDY OF GLASS-METAL BONDS. [1963] 10p.
Order from SLA $1.10 63-10859

Trans. of Leitz-Mitt. Wiss. u. Techn. [sic] 1960, v. 1, May, p. 136-139.

DESCRIPTORS: Heating, *Polarization, *Microscopes, *Glass, *Metals, Fused materials, Bonding, Thermal stresses, *Microscopy, Seals (Stoppers).

Hevia Rodriguez, V.
APPLICATION OF AN IMMERSION SYSTEM IN THE STEREOSCOPIC MICROSCOPE PREPARED FOR OBSERVATION OF COAL BY REFLECTANCE (Aplicacion de un Sistema de Immersion al Microscopio Estereoscopico Preparado para la Observacion por Reflexion del Carbon). 1962 [28]p. (foreign text included) 19 refs.
Order from SLA $2.60 63-14061

Trans. of Instituto Nacional del Carbon. Boletin Informativo (Spain) 1955, no. 19, p. 3-16.

DESCRIPTORS: *Microscopes, *Stereoscopes, *Coal, Optical properties, Surface properties, Reflection, Light, Oils, Microscopy.

Hildebrand, K. and Seiffert, G.
DISTANCE MEASURING WITH MODULATED LIGHT BEAMS. [1963] 22p. (figs. refs. omitted).
Order from SLA $2.60 63-16302

Trans. of Zeits[chrift für] Instrumentenkunde (West Germany) 1959, v. 67, p. 52-59.

DESCRIPTORS: *Range finding, *Optical equipment, *Light, Frequency modulation, Ranges (Distance), Operation.

The paper describes the basic principles of electro-optical distance measurement and the present state of instrument technology.

Senftleben, Hermann and Benedict, Elisabeth.
DIFFRACTION OF LIGHT BY CARBON PARTICLES OF LUMINOUS FLAMES. [1963] [34]p. 37 refs.
Order from SLA $3.60 63-14686

Trans. of Annalen der Physik (Germany) 1919, ser. 4, v. 60, no. 20, p. 297-323.

DESCRIPTORS: *Diffraction, *Light, *Carbon, Particles, Flames, *Optical properties, Brightness, Polarization, Absorption, Optics

Solid State Physics

DIRECT ENERGY CONVERSION IN THE USSR: SOLAR CELL RESEARCH (COMPREHENSIVE REPORT). 6 Feb 63 [63]p. 176 refs. AID rept. P-63-20; AD-297 389.
Order from OTS or SLA $6.60 63-15724

DESCRIPTORS: *Energy conversion, *Solar cells, Silicon, Cadmium compounds, Tellurides, Gallium compounds, *Semiconductors, *Scientific research, *Scientific personnel, Photoelectric cells (Semiconductor), Bibliographies.

A survey was made of scientific literature and scientific personnel which indicated that one of the major tasks assigned to science workers was the development of methods for direct conversion of solar energy into electric power. The principal trend of research was in the theoretical studies of the photovoltaic effect so as to gain a better understanding of the basic principles underlying the processes of the absorption and utilization of photon energy for the creation of electron hole pairs. Studies included were: semiconductors imperfections, problems of recombination processes and energy band structures. Of particular importance was the evaluation of materials having the theoretically most propitious energy gap for use in photoelements. Materials included were: silicon, cadmium telluride, gallium phosphide, and cadmium sulfide. There are reasons to expect that the heavy reliance of researchers on theoretical consideration is already paying off by allowing them to avoid costly mistakes in the application of such knowledge.

INTERNATIONAL COLLOQUIUM ON THE PRESENT STATE OF KNOWLEDGE OF THE ELECTRICAL AND MAGNETIC PROPERTIES OF THIN METAL LAYERS IN RELATION TO THEIR STRUCTURE (NO. 20) ALGIERS, APR 55. [1963] [63]p 41 refs.
Order from SLA $6.60 63-14679

Trans. of Journal de Physique et le Radium (France) 1956, v. 17, no. 3, p. 169-306.

DESCRIPTORS: *Thin films, *Metal films, Electrical properties, Magnetic properties, *Vapor plating, Crystallization, *Crystal structure, Deposits, Thickness, Tracer studies, *Grain structures (Metallurgy), Optical properties.

Contents:
Thin layers and epitaxy, by L. Royer
Initial stages of the formation of thin metallic layers obtained by thermal vaporization on a crystalline surface, by M. Blackman
Techniques of the production thin metallic layers by condensation, by E. C. Crittenden, Jr. and R. W. Hoffman
Study of the structure of thin layers by means of optical methods, by P. Rouard

Berdennikov, V. P.
MEASURING SURFACE TENSION OF SOLIDS (Messung der Oberflächenspannung von Festen Körpern). 20 Apr 45 [28]p. (foreign text included) 2 refs.
Order from SLA $2.60 62-20352

Summary trans. of [Physikalische Zeitschrift der Sowjetunion] (Germany) 1933, v. 4, p. 397-419.

DESCRIPTORS: Measurement, *Surface tension, *Solids, Fracture (Mechanics), *Glass, Elasticity,

Bokshtein, S. Z., Gubareva, M. A. and others.
DIFFUSION, RECRYSTALLIZATION, AND PHASE TRANSITIONS (Diffuziya, Rekristallizatsiya i Fazobye Prevrashcheniya). [1962] [15]p. 9 refs.
Order from OTS or SLA $1.60 AEC-tr-5362

Trans. of mono. Conference on Radioisotopes in the Physical Sciences and Industry, Copenhagen, 6-17 Sep 62. Proceedings, v. 1, 1962, p. 193-206 (STI/PUB 20).

DESCRIPTORS: *Diffusion, *Recrystallization, *Phase transitions, Grain structures (Metallurgy), Radioactive isotopes, Creep, Steel, Titanium.

A method is developed for studying with radioisotopes the behavior of grain boundaries in the process of plastic deformation and later recrystallization. (Author)

Götzenberger, Adolf.
CRYSTALLIZATION OF SUBLIMATED ANTIMONY LAYERS [Über die Kristallisation Aufgedampfter Antimonschichten]. [1963] [28]p. 21 refs.
Order from SLA $2.60 63-14666

Trans. of Zeitschrift für Physik (West Germany) 1955, v. 142, p. 182-200.

DESCRIPTORS: *Antimony, *Sublimation, *Crystallization, Sheets, Phase studies.

Investigations of the conditions of formation and of the mechanism of the different phenomena occurring in the crystallization of sublimated antimony layers are reported. The special position of antimony is based on the fact that it is sublimated from the vapor phase first in a relatively stable non-metallic modification. The further behavior of the layer obtained decisively depends on the thickness of this layer. (Author)

Grimminger, H. and Richter, H.
STRUCTURE OF THIN SUBLIMATED LAYERS OF ARSENIC AND IODINE AT LOW TEMPERATURES. [1963] [12]p. 23 refs.
Order from SLA $1.60 63-14667

Trans. of Z[eitschrift für] Naturforschung (West Germany) 1956, v. 11a, p. 942-945.

DESCRIPTORS: *Arsenic, *Iodine, *Sublimation, Phase studies, Low temperature research, Structural properties, Electron diffraction analysis.

As, Sb and I were sublimated in a low-temperature chamber at the temperature of liquid air and studied in an electron-diffraction tube at the same temperature as well as after heating to room temperature. Amorphous As layers showed distinct differences in the position of the interferences, which indicates a change in the structural composition of the layers. No changes in the position of the interferences were noted for Sb. Layers prepared by separation of I from the solutions yielded the fine-crystalline form of rhombic I. Sublimation of I in a vacuum, even with strong cooling of the preparation carrier, always produced crystalline (rhombic) layers. However, if oil was also sublimated in these experiments, the amorphous form of I was obtained with its periodic values, which distinctly differed from the corresponding lattice. When heating the sample to room temperature, the amorphous I suddenly is converted to its crystalline form at $t \approx -60^{\circ}$. This conversion is direct proof of the presence of amorphous I. (Author)

Grzymek, Jerzy.
CONTROLLING THE CRYSTAL HABIT DURING THE PROCESS OF CRYSTALLIZATION. [1963] 25p. (figs. omitted) 21 refs.
Order from SLA $2.60 63-14568

Trans. of Przemysl Chemiczny (Poland) 1937, v. 21, p. 279-289.

DESCRIPTORS: *Crystallization, *Crystal growth, Control, *Crystal structure, Salts, *Solutions, Cooling, Geometric forms, *Colloids, Diffusion, Density, Particles.

Hulliger, F. von.
ON THE CONNECTION BETWEEN MAGNETISM AND ELECTRICAL CONDUCTIVITY OF COMPOUNDS WITH TRANSITION ELEMENTS. [1963] 54p. (figs. tables [refs.] omitted).
Order from SLA $5.60 63-14855

Trans. of Helvetica Physica Acta (Switzerland) 1959, v. 32, p. 615-654.

DESCRIPTORS: *Chemical bonds, *Magnetism, *Electrical conductance, Chemical compounds, *Transition elements, Valence, Electrons, *Semiconductors, Ferromagnetism.

In judging the compounds with transition elements the problem consists of being able to conclude whether the non-binding d- or f-electrons are independent from the binding-electrons. A partial occupation of energetically equivalent electron states in cations directly interconnected has as result a metallic conduction character. Such bindings are not possible in lattices, in which the anions form a cubical packing of the spheres; (heavy metal-nitride and carbide are on account of their relative sizes excepted) they are possible, however, in hexagonal packing which is generally strongly deformed through these bindings (Bindings of the type B8 and B31) Careful studies of conductivity in Pyrit and Markasit-type cofirm the expected semiconductor character in $MnSe_2$, $MnTe_2$, $FeSe_2$, FeP_2, $FeAs_2$ $FeSb_2$ FeAsS, CoAsS, CoSbS, $CoAs_2$, $NiAs_2$ and NiS_2, also in the up til now unkown compounds FePS, FeAsSe, CoPS and CoAsSe. Semiconduction could also be proven for $CoAs_3$ The sintered experiments of the ferromagnetic CoS_2 proved, however, to be metallic. Ferromagnetic coupling does not cause a metallic character in every case. A three-dimensional ferromagnetic orientation seems, however, possible only on the ground of a not as yet known coupling mechanism.

Lapitskii, A. V. and Simanov, Yu. P.
LITHIUM METANIOBATE AND METATANTALATE (Metaniobat i Metatantalat Litiya) tr. by Marcel I. Weinreich. 23 Aug 62, 6p. 5 refs.
Order from OTS or SLA $1.10 SCL-T-437

Trans. of Zhurnal Fizicheskoi Khimii (USSR) 1955, v. 29, no. 7, p. 1201-1203.
Another trans. is available from OTS or SLA $1.10 as 62-18212, 6 July 62 [14]p.

DESCRIPTORS: *Lithium compounds, *Niobates, *Tantalium compounds, Oxides, Crystal structure, Lattices, X-ray diffraction analysis.

The lattice parameters of the hexagonal (rhombohedral) lithium metaniobate and metatantalate have been determined by an x-ray powder method. (Author)

Michelitsch, Michael.
WETTING AND ALLOYING STUDIES ON GERMANIUM. [1963] 17p. 7 refs.
Order from SLA $1.60 63-14014

Trans. of Zeitschrift fur Angewandte Physik (West Germany) 1960, v. 12, no. 4, p. 180-184.

DESCRIPTORS: *Germanium, Surface-active substances, *Indium, Indium alloys, *Semiconductors, Halides, Antimony, Aluminum alloys, Gallium alloys

A report is given on a simple, readily reproducible wetting process which is suitable for wetting germanium at elevated temperatures with indium and its alloys. It essentially consists in that the oxide films on the starting materials are replaced by halide films and these are then reduced in a hydrogen atmosphere at moderately high temperatures. 'Pure' material surfaces are thus obtained, at least at the moment of contact between the alloy components. By this means good wetting is achieved. The wetting and alloying characteristics are discussed in detail. (Author)

Pekar, S. I.
ON THE EFFECT OF LATTICE DEFORMATION BY ELECTRONS ON THE OPTICAL AND ELECTRIC PROPERTIES OF CRYSTALS [O Vliyanii Deformatsii Reshetok Elektronami na Opticheskie i Elektricheskie Svoistva Kristallov]. [1963] [92]p. 48 refs. MDF P102.
Order from OTS or SLA $8.60 63-23115

Trans. of Usp[ekhi] Fiz[icheskikh] Nauk (USSR) 1953, v. 50, no. 2, p. 197-252.

DESCRIPTORS: *Deformation, *Crystal lattices, Nonmetals, *Crystals, Dielectrics, Semiconductors, *Electrons, Chemical bonds, Electron transitions, Absorption spectrum, Luminescence, Polarization, Ions, Oscillation, *Optical properties, *Electrical properties, Solid state physics.

The present paper is devoted to the theory of nonmetallic crystals - dielectrics and semi-conductors. The contemporary theory of semi-conductors can be divided into two parts: (a) phenomenological theory and (b) microtheory of the electron state in the crystal. (Author)

Priselkov, Yu. A., Sapozhnikov, Yu. A. and others.
SOME PROBLEMS OF THE ACCURACY OF THE EFFUSION METHOD FOR DETERMINING THE SATURATED VAPOR PRESSURE OF INDIUM. [1962] [7]p. 3 refs.
Order from OTS or SLA $1.10 63-13398

Trans. of Izvest[iya] Vysshikh Uchebn[ykh] Zavedlenii] Khim[iya] i Khimich[eskaya] Tekhnol[ogiya] (USSR) [1960, v. 3] no. 3, p. 447-451.

DESCRIPTORS: *Indium, *Vapor pressure, Silver, Heat, *Diffusion.

Silver and indium were used in ascertaining the conditions required for employing high-frequency heating to determine vapor pressure by Knudsen's method. An improved effusion chamber was used in studying the effect of the axial temperature gradient. It was found that the vapor pressure within the effusion chamber is practically governed by the temperature of the diaphragm at small temperature gradients. The saturated vapor pressure of indium was determined, and the following equation derived: $\log P = 7.546 - \frac{11221}{T}$. (Author)

Proepstl, Georg and Zielasek, Gotthold.
DISTRIBUTION OF ANTIMONY IN QUENCHED Ge-Sb PREALLOYS. [1963] 14p. (3 figs. omitted).
Order from SLA $1.60 63-14006

Trans. of Zeitschrift für Angewandte Physik (West Germany) 1958, v. 10 [no. 5] p. 201-204.

DESCRIPTORS: *Antimony, Germanium alloys, *Antimony alloys, Quenching (Cooling), *Semiconductors, *Germanium, Single crystals, Autoradiography

Shatalov, A. A.
RELATION BETWEEN THE DIFFUSION COEFFICIENT AND THE MOBILITY OF THE F CENTERS IN ALKALI HALIDE CRYSTALS (O Sootnoshenii Mezhdu Koeffitsientom Diffuzii i Podvizhnost'yu f-Tsentrov v Shchelochno-Galoidnykh Kristallakh) tr. by Marcel I. Weinreich. 5 Sep 62, 4p. 5 refs.
Order from OTS or SLA $1.10 SCL-T-438

Trans. of Kiev U. Naukovi Povidomlennya. [Fizyka] (USSR) 1956, no. 1, p. 15-17.

DESCRIPTORS: *Alkali metal compounds, *Sodium compounds, *Potassium compounds, *Halides, *Chlorides, Crystals, *Color centers, Electrons, Diffusion.

With the aid of photography and photometry, the correctness of Einstein's correlation, both for the diffusing F-electrons and F-electrons that are stopped (arrested) by the electric field in NaCl and KCl crystals, is demonstrated by coloration clouds induced in the crystals by an electric field. A state of equilibrium between the diffusional and electric forces is obtained by reversing the electric field. The correlation between the diffusion coefficient and the mobility of the F centers in the crystals is explained by equations. (NSA abstract)

Theoretical Physics

Bogolyubov, N. N.
THEORY OF SUPERCONDUCTIVITY. 13 Feb 63 [12]p. FTD-TT-62-1714. AD-400 554.
Order from OTS or SLA $1.60 63-19502

Unedited rough draft trans. of Nauka i Zhizn' (USSR) 1958 [v. 25] no. 8, p. 17-20.

DESCRIPTORS: *Cryogenics, *Superconductivity, Theory, *Quantum mechanics, Electrons, Phonons, Electrostatics, Models (Simulations).

A semitechnical general review, and explanation of Bogolyubov's electrostatic repulsion model.

Mitskevich, N.
MACHINE FOR PRODUCTING GRAVITATION FANTASY OR REAL POSSIBILITY? [1963] [9]p.
Order from OTS or SLA $1.10 63-14682

Trans. of Yunyi Tekhnik (USSR) 1958, v. 2, no. 4, p. 44-48.

DESCRIPTORS: *Gravity, Production, Inhibition, Theory, Machines, Relativity theory, *Quantum mechanics.

A popularized account suggesting that man's hopes for the control of gravity hinge on the discovery of "gravitrons"-quantum carriers of gravity.

Nevzglyadov, V. G.
QUANTUM THEORY OF A PARTICLE ROTATING UNDER STRAIN. [1962] 7p. 7 refs.
Order from OTS or SLA $1.10 63-10852

Trans. of Akademiya Nauk SSSR. Doklady, 1962, v. 142, no. 1, p. 59-62.

DESCRIPTORS: *Quantum mechanics, Particles, Rotation, Stresses, Equations of motion, Theory.

Thermodynamics

Brodin, Jean.
GRAPHICAL PREDICTION OF LIQUID-VAPOR AND LIQUID-LIQUID EQUILIBRIA IN MIXTURES. [1963] 3p.
Order from SLA $1.10 63-14824

Trans. of [Academie des Sciences, Paris]. Compt[es] Rend[us] (France) 1948, v. 227, p. 1080-1082 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Phase studies, Liquids, Vapors, Mixtures, Equations of state, *Graphic analysis, Mathematical prediction.

Chakalev, K. N.
HEATING OF A PLATE AT A SHIFTING HEAT EXCHANGE SURFACE. 18 Feb 63 [10]p. 8 refs.
FTD-TT-62-1770; AD-299 857.
Order from OTS or SLA $1.10 63-19505

Unedited rough draft trans. of Inzhenerno-Fizicheskii Zhurnal (USSR) 1962, v. 5, no. 4, p. 25-30.

DESCRIPTORS: *Thermodynamics, Partial differential equations, Melting, Surfaces, Heat exchangers, Heat transfer.

An approximate solution is obtained for the problem of non-stationary heat transfer for an unlimited plate on the surface of which physical and chemical transformations are taking place. As a result of the approximate solution of the problem relationships are obtained by means of which the rate of motion of a melting front and heat flow within the solid part can be determined by calculation (temperature change in time at some point within the plate is assumed to be known). (Author)

Grishin, V. A.
HEAT MEASUREMENTS WITH THE FLOWING HEAT COMPENSATION METHOD AND CERTAIN COMPARATIVE RESULTS. 16 May 63 [19]p. 10 refs.
AID rept. T-63-66.
Order from OTS or SLA $1.60 63-19447

Trans. of paper presented at the Conference on Heat and Mass [Transfer] held in Minsk [5-10 June] 61.

DESCRIPTORS: *Thermodynamics, *Heat transfer, Thermocouples.

The method of flowing heat compensation can be applied to determine a local heat emission coefficient, and if the temperature drop through the thickness of the tested zone is known, the heat conductivity coefficient can be determined also; this method can also be used for calculating temperature of places that are inaccessible for direct measurement. Having obtained measurements at various typical points, it is possible to get a picture of the thermal field of, for instance, an electric machine. In other words, the method can give an engineer's solution of Laplace's and Poisson's system of equations. The basic principle of the method is inequality of the temperature gradient at the boundary where the layers of a multilayered wall with various thermophysical characteristics come in contact with one another. It may be assumed that the imperfect completion of the boundary conditions of the fourth type, because of air connections at the boundaries, intensifies the nonlinear effect. (Author)

Kostryukov, V. N. and Strelkov, P. G.
THERMODYNAMIC RESEARCH AT LOW TEMPERATURES. V. FUSION, OVERFUSION, AND FALSE PHASE TRANSITION OF MERCURY (Termodinamicheskie Issledovaniya pri Nizkikh Temperaturakh...). [1962] [17]p. 9 refs. NBS S-409043-63-D; JPRS R-3014-D.
Order from OTS or SLA $1.60 63-19040

Trans. of Zhurnal Fizicheskoi Khimii (USSR) 1954, v. 28, no. 10, p. 1825-1830.

DESCRIPTORS: *Thermodynamics, *Low temperature research, *Mercury, Calorimetry, Melting, Phase transitions, Eutectics, *Zinc alloys, *Thallium alloys.

Colorimetric study close to the point of fusion showed the lack of any king of irregularities in thermal capacity with pure mercury in the solid, liquid, and supercooled state. A conclusion is made about the absence of meas-

urable displays of the existence in solid mercury of heterophase transitions up to 0.01 degree from the temperature at which solidification starts. Addition to pure mercury of Zn, Tl, and Zn + Tl induced experimentally overfusion. With the concentration of thallium in the mercury between 0.02 and 0.1 percent, besides overfusion, there is displayed a peak in the thermal capacity with the temperature of fusion of the eutectic mercury-thallium, imitating a phase transition. (Author)

Kudryavtsev, E. V. and Chakalev, K. N.
UNIVERSAL ELECTRONIC CALORIMETER. 1960, 10p. 11 refs.
Order from OTS or SLA $1.10 AEC-tr-4934

Trans. of Inzhenerno-Fizicheskii Zhurnal (USSR) 1960, v. 3, no. 1, p. 3-9.

DESCRIPTORS: *Calorimeters, Design, *Thermal conductivity, Heat transfer, *Electronic equipment, Silver.

The paper gives the theory, elementary diagram and construction of the universal electronic calorimeter recommended for the determination of true absolute values of heat capacity, thermal conductivity, heat of vaporization (melting) and electrical conductivity of materials as a function of temperature. The calorimeter was tested on a silver specimen. (Author)

Lippmann, Friedrich.
APPARATUS FOR DIFFERENTIAL THERMAL ANALYSIS. [1963] 16p. (figs. omitted) 3 refs.
Order from SLA $1.60 63-14163

Trans. of Keramische Zeitschrift (West Germany) 1959, v. 11, no. 10, p. 524-528.

DESCRIPTORS: *Calorimetry, *Thermocouples, Design, Operation, Thermodynamics, Temperature sensitive elements.

Milosavlievitch, Dragolioub.
DETERMINATION OF THE RELATIONSHIP BETWEEN PRESSURE AND THE CORRESPONDING BOILING TEMPERATURE. [1963] 2p.
Order from SLA $1.10 63-14563

Trans. of [Academie des Sciences, Paris]. Compt[es] Rend[us] (France) 1947, v. 224, p. 1345-1346 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Vapor pressure, Pressure, *Boiling, Determination, Equations.

Sänger, Eugen.
HYPOTHESIS OF POWDER BURNING. [1962] 3p.
Order from SLA $1.10 63-14367

Partial rough draft trans. of Z[eitschrift] f[ür] Naturforschung (West Germany) 1950, v. 5a, p. 467-469.

DESCRIPTORS: *Powders, *Combustion, Velocity, Thermodynamics, Theory

Shakhparonov, M. I., Lel'chuk, S. L., and Korchemskaya, K. M.
THE THERMODYNAMIC PROPERTIES OF SOLUTIONS OF CHLORINE DERIVATIVES OF SILANE. [1962] [5]p. 1 ref.
Order from OTS or SLA $1.10 63-13720

Trans of Akad[emiya] Nauk SSSR. Doklady, 1960, v. 133, no. 6, p. 1388-1390.

DESCRIPTORS: *Thermodynamics, Solutions, *Silanes, Pressure, Density, *Chlorine compounds, Vapors.

The present communication reports the principal results of an investigation of the pressure and the density of saturated vapors in the following systems: CH_3SiHCl_2 - $SiCl_4$; $SiHCl_3$ - C_6H_6; CH_3SiCl_3 - $SiCl_4$, $(CH_3)_3SiCl$ - CH_3SiHCl_2, $(CH_3)_3SiCl$ - CH_3SiCl_3, and in solutions of CH_3SiHCl_2 and CH_3SiCl_3 in an azeotropic mixture containing 45.93 mol.% $(CH_3)_3SiCl$ and 54.07 mol.% $SiCl_4$.

Vyshenskaya, V. F. and Kosov, N. D.
INVESTIGATION OF THE TEMPERATURE DEPENDENCE OF THE COEFFICIENT OF DIFFUSION OF GASES. 16 May 63 [18]p. 16 refs. AID rept. T-63-67.
Order from OTS or SLA $1.60 63-19443

Trans. of paper presented at the Conference on Heat and Mass [Transfer] held in Minsk [5-10 June] 61.

DESCRIPTORS: Diffusion, Gases, *Temperature, Thermodynamics, *Differential equations, Mathematical analysis, *Gas diffusion, Carbon dioxide, Hydrogen, Nitrogen.

Two methods of determining coefficient of diffusion of gases (c.d.g.) (weight and freezing) are described. With the first, c.d. are determined for the system of gases CO_2 - H_2, CO_2-N_2, N_2-H_2, T_2-N_2 in the range of temperatures 20 ÷ 800°C, and also for the system T_2-CO_2 in the range of 200 ÷ 1,000°C. A semi-empirical formula of dependence of c.d.g. on temperature is offered. A connection between the coefficients of self-diffusion and interdiffusion of gases is established.

RESEARCH METHODS, TECHNIQUES AND EQUIPMENT

CHINESE (MAINLAND) SCIENCE AND TECHNOLOGY JOURNALS: [TRANSLATED] TABLE OF CONTENTS, UNIVERSITY JOURNAL 2, tr. by N. H. Ng. Rept. on Contract AF 19(604)8505. Aug 62 [76]p. Emmanuel Coll. Research Language Center rept. no. Univ. Jour. 2.
Order from OTS or SLA $7.60 63-15757

Trans. of table of contents and selected abstracts of Pei Ching Ta Hsüeh Hsüeh Pao. Tzu Jan K'o Hsüeh (Chinese People's Republic) 1956, v. 4, nos. 2-3; Chung Shan Ta Hsüeh Hsüeh Pao: Tzu Jan K'o Hsüeh (Chinese People's Republic) 1957. Nos. 1-2, Fu Tan Hsüeh Pao. Tzu Jan K'o Hsüeh (Chinese People's Republic) 1957, no. 1.

DESCRIPTORS: *Science, *Periodicals, *Indexes, *China, *Abstracts, Projective geometry, Operators (Mathematics), Statistical functions. *Mathematics, Thorium, Sodium compounds, Sulfites, Selenium compounds, Molecular structure, *Chemistry, Pressure vessels, Nuclear scattering, Oscillation, Meteorology, Ethyl radicals, Benzenes, Propenes, Enzymes, *Color vision, *Psychology, *Physics, *Biology, Pyrroles, Taylor's series, Functions, Polynomials, Integral equations, Sucrose, Phosphorus compounds, Tungstic acid, Chemical analysis, *Thermostats, Meninges, Body, Measurement.

CHINESE (MAINLAND) SCIENCE AND TECHNOLOGY JOURNALS: [TRANSLATED] TABLE OF CONTENTS, UNIVERSITY JOURNAL 3, tr. by N. H. Ng. Rept. on Contract AF 19(604)8505. Emmanuel Coll. Research Language Center rept. no. Univ. Jour. 3. Order from OTS or SLA $3.60 63-15755

Trans. of table of contents and selected abstracts of Lan Chou Ta Hsüeh Hsüeh Pao: Tsu Jan K'o Hsüeh (Chinese People's Republic) 1957, no. 1; Tung Pei Jen Min Ta Hsüeh: Tzu Jan K'o Hsüeh Hsüeh Pao (Chinese People's Republic) 1958, no. 1; Wu Han Ta Hsüeh: Tzu Jan K'o Hsüeh Hsüeh Pao (Chinese People's Republic) 1957, no. 2, Chiao T'ung Ta Hsüeh Pao (Chinese People's Republic) 1957, nos. 1-2.

DESCRIPTORS: *Science, *Periodicals, *Indexes, *China, *Abstracts, *Mathematics, Matrix algebra, Algebraic topology, Topology, Geodesics, *Chemistry, Vanadium, Sulfonic acids, Thorium, Quantum mechanics, Glycerols, Magnesium compounds, *Climatology, Probability, Differential equations.

FOREIGN DEVELOPMENTS IN MACHINE TRANSLATION AND INFORMATION PROCESSING NO. 34
11 Oct 61 [78]p. 26 refs. JPRS: 10367
Order from OTS or SLA $7.60 63-23155

Trans. of Rapport GRISA [sic] 1960, no. 2, 15p.; no. 4, 26p.; no. 5, 27p.; no. 6, 14p.

DESCRIPTORS: *Machine translation, *Language, *Documentation, Science, Data, Processing, Graphic analysis, Data processing systems, *Algorithms, *Programming (Computers).

Contents:
What is GRISA? by A. Leroy
A self-priming automatic analysis unit, by Y. Lecerf and A. Leroy
A theory of G-orders, by P. Ihm and Y. Lecerf
Program of conflict; model of conflict, by Y. Lecerf
Provisional instructions for diagramming scientific texts, by J. Ruvinschi
Description of an algorism for information analysis, by Y. Lecerf and A. Leroy.

FOREIGN DEVELOPMENTS IN MACHINE TRANSLATION AND INFORMATION PROCESSING NO. 42.
11 Oct 61 [95]p. JPRS: 10361.
Order from OTS or SLA $8.60 61-28890

Trans. of Rapport GRISA [sic] 1961, no. 9, p. 1-53.

DESCRIPTORS: *Machine translation, *Language, *Programming languages, *Social sciences, Data, Processing, Collaboration, Programming (Computers), Data processing systems, *Documentation.

Contents:
Note, by E. G.
Report on the work of G.E.D.S.H. (Marc Bloch Association) during second quarter 1960, by J. C. Gardin
Information-processing requirements. Frame of reference for collaboration with G.E.D.S.H, by A. Leroy.

FOREIGN DEVELOPMENTS IN MACHINE TRANSLATION AND INFORMATION PROCESSING NO. 43.
4 Oct 61 [29]p. 3 refs. JPRS: 10380.
Order from OTS or SLA $2.60 61-28932

Trans. of Rapport GRISA [sic] 1960, no. 3, p. 1-19.

DESCRIPTORS: *Machine translation, *Language, Mathematical analysis, Algebra, Data, Processing, *Programming languages, *Social sciences, Programming (Computers), Data processing systems, *Documentation.

Contents:
Note, by E. G.
Elementary algebraic analysis of the Lecerf-Ihm criterion, by P. Camion
Report on the work of G.E.D.S.H. (Marc Bloch Association) during first quarter 1960, by J. C. Gardin.

FOREIGN DEVELOPMENTS IN MACHINE TRANSLATION AND INFORMATION PROCESSING NO. 50.
26 Oct 61 [70]p. (figs. omitted) 19 refs. JPRS: 10721.
Order from OTS or SLA $6.60 62-13688

Trans. of Nauka i Zhizn' (USSR) 1961 [v. 28] no. 6, p. 50-54; Rapport GRISA [sic] 1960, no. 7, p. 1-17; Vestnik Istorii Mirovoi Kul'tury (USSR) 1961, no. 3(27) p. 22-37.

DESCRIPTORS: *Machine translation, *Language, *Culture, Analysis.

Contents:
Machines are learning languages, by L. A. El'kind
Analysis and development of a linguistic pattern (preliminary report) by Paul Braffort and Peter Ihm
The cultural significance of machine translation, by O. S. Kulagina and others.

PRELIMINARY STUDY ON THE TECHNIQUES OF AUTOMATIC DOCUMENTATION. Foreign Developments in Machine Translation and Information Processing no. 35. 27 Sep 61 [55]p. (refs. omitted). JPRS: 8938.
Order from OTS or SLA $5.60 61-28745

Abstract trans. of mono. Enseignement Preparatoire aux Techniques de la Documentation Automatique (EURATOM) Brussels, 15-22 Feb 60.

DESCRIPTORS: *Machine translation, Data, Processing, *Language, *Documentation, *Data processing systems, Mathematics, Information theory, Philosophy, Statistical distributions, Social sciences, Automatic, Analysis.

Contents:
Presentation of the lectures, by A. Leroy
Historical notes about the systems of documentation, by E. de Grolier
Introduction to the mathematics session, by P. Braffort
Information theory, by M. Schutzenberger
Practical works in statistical linguistics, by J. Larisse
Introduction to the linguistics session, by A. Leroy
Philosophical problems of language, by S. Ceccato
Elements of mathematical linguistics, by P. Braffort
On the statistical laws of linguistic distributions, by V. Belevitch
Practical exercises in linguistics, by Y. Lecerf
Formulation of a documentation system, by A. Leroy
Analysis and selection of documents in the humanities by J. C. Gardin
Discussion on documentation systems
Practical exercises in diagram construction, by M. Detant and others
Automatic analysis (programs of conflicts) by Y. Lecerf
The "L'Unite" documentation system, by Th. W. te Nuyl
Some problems in processing nonnumerical information, by J. Poen
Common points between the problems of automatic translation and automatic documentation, by J. Jung
Fully automatic documentation, by A. Leroy
General conclusion, by P. Braffort.

REPORTS ON MACHINE TRANSLATION, 1962, NO. 1. Foreign Developments in Machine Translation and Information Processing no. 128. 21 June 63, 122p. JPRS: 19793.
Order from OTS $2.75 63-31091

Trans. of Soobshcheniya po Mashinnomu Perevodu (Estonian SSR) 1962, no. 1, p. 3-96.

DESCRIPTORS: *Machine translation, Reports, *Language, Algorithms, Coding, Programming (Computers), Data storage systems, Typewriters.

Contents:
Some remarks on the tasks and prospects of MT (to stimulate discussion) by R. Pal'm
The parts of speech of the Estonian language, by T. Tobias
The syntactic analysis of Estonian locutions, by T. Tobias
The combination of words in the Estonian sentence, by T. Tobias
Algorithm of identification of Estonian designations of moments of time, by M. Ollissaar
One method of "compact" alphabetic coding, by R. Pal'm
The morphological analysis of the Russian sentence, by R. Pal'm
One pattern of automatic compilation of a binary translation algorithm on the basis of a study of parallel texts, by R. Pal'm
Survey of works on MT at the Tartu State University, by A. Korjus
A translating machine in Tallin in 1924.

REPORTS ON SOVIET-BLOC SCIENTIFIC CONFERENCES. 18 June 63, 13p. JPRS: 19735.
Order from OTS $0.50 63-31070

Trans. of Magyar Tudomanyos Akademia Kemiai Tudomanyok Osztalyanak Kozlemenyei (Hungary) 1963, v. 19, no. 2, p. 279-282; no. 3, p. 355-362.

DESCRIPTORS: *Conferences, *Reports, Abstracts, *Polymers, Transformations, Decomposition, Stabilization, *Thermodynamics, Instrumentation, *Chemistry, *Spectroscopy, Molecular structure.

Contents:
Smolenice Conference on the Chemical Transformation of Polymers, by Ferenc Tudos and others
All Soviet Conference on Thermography (no. 3) Riga, Sep 62, by Laszlo Erdei
Scientific Congress of the Chemical Society of the German Democratic Republic, 1962, by Gabor Fodor.

Hayasaka, Hisao and Suzuki, Tamiji.
CONDENSER RECEIVER. [1962] 22p. 8 refs.
Order from SLA $2.60 62-20162

Trans. of Denki [Tsushin] Gakkai Zasshi (Japan) 1957, v. 40, no. 11, p. 1151-1157.

DESCRIPTORS: *Telephone receivers, *Capacitors, *Titanium, Design, Tests, *Microphones.

Markov, A. A.
ALGORITHMS ASSOCIATED WITH SYSTEMS OF WORDS. Foreign Developments in Machine Translation and Information Processing no. 124. 10 June 63, 103p. 4 refs. JPRS: 19611.
Order from OTS $2.50 63-31010

Trans. of Akademiya Nauk SSSR. Izvestiya. [Seriya Matematicheskaya] 1963. v. 27, no. 1, p. 101-160.

DESCRIPTORS: *Algorithms, *Machine translation, *Mathematical logic, Language, Dictionaries.

Systems of words in a given alphabet A can be regarded as words in an alphabet derived from A by means of adjoining one new letter which plays the role of a partitioning sign. This article is concerned with certain concepts and certain normal algorithms associated with systems of words created in the manner in-

dicated. The article was written as an auxiliary to future efforts. (Author)

Pavlov, Todor.
AUTOMATS, LIFE, AND CONSCIOUSNESS. 16 May 63, 11p. JPRS: 19231.
Order from OTS $0.50 63-21834

Trans. of Nauchnye Doklady Vysshei Shkoly. Filosofskie Nauki (USSR) 1963, no. 1, p. 49-57 (reprinted from Mladezh (Bulgaria) 1962, no. 8).

DESCRIPTORS: *Philosophy, *Cybernetics, *Biology, Evolution, Brain, Artificial intelligence, Reflection.

Piloty, Robert.
EVALUATION OF MODULATION SYSTEMS USING THE INFORMATION THEORY CONCEPT OF CHANNEL CAPACITY. [1963] 3p.
Order from SLA $1.10 63-14429

Trans. from Archiv der Elektrischen Übertragung (West Germany) 1950 [v. 4] Dec.

DESCRIPTORS: *Communication theory, Modulation, Information theory.

Revzin, Isaak Iosifovich.
FOREIGN DEVELOPMENTS IN MACHINE TRANSLATION AND INFORMATION PROCESSING NO. 129. 25 June 63 [295] refs. JPRS: 19852.
Order from OTS $4.00 63-31107

Trans. of mono. Modeli Yazyka (Language Models) Moscow, 1962, p. 3-[190].

DESCRIPTORS: *Machine translation, *Language, Data, Processing, Speech.

Contents:
Author's foreword
Types of language models
Methods of modelling phonology
Basic meanings in the construction of grammatical models and their linguistic interpretation
Paradigmatic models in grammar
Syntagmatic models in grammar
Appendix

Photographic Equipment

Kanagusuku, Kikuo.
METHOD OF MANUFACTURING RADIATION ELECTRONIC PHOTOGRAPH PLATES. [1962] 3p.
Order from OTS or SLA $1.10 63-10868

Trans. of Japan patent publication 62-12641, application 59-38200, pub. 1 Sep 62, appl. 9 Dec 59, by Oriental Photographic Industry Co.

DESCRIPTORS: *Photographic plates, Electronics, *Photoelectric materials, Manufacturing methods, *Radiography, Electrophotography.

This invention relates to a method and means of manufacturing radiation electronic photograph plates, and more particularly to means of manufacturing radiation electronic photograph plates where unique sensitizers are added to a photoconductive layer which is formed by dispersing photoconductive zinc oxide in a resin binder so as to increase greatly the sensitivity to radiated ray thereby. (Author)

Kirlyan, S. D. and Kirlyan, V. Kh.
PHOTOGRAPHY AND VISUAL OBSERVATION BY MEANS OF HIGH-FREQUENCY CURRENTS. 29 Jan 63 [17]p. FTD-TT-62-1549; AD-299 666.
Order from OTS or SLA $1.60 63-19181

Unedited rough draft trans. of Zhurnal Nauchnoi i Prikladnoi Fotografii i Kinematografii (USSR) 1961, v. 6, no. 6, p. 397-403.

DESCRIPTORS: *Electrophotography, Photography, High frequency, Electric currents, Dielectric properties, Electron optics, *Photographic images, *Tissues (Biology), Histology, Dielectric films.

A method of producing photographs from the action of high-frequency currents was developed, the principle of which consists in the conversion of the nonelectrical properties of the object being photographed into electrical ones through the action of a field with a directed transfer of charges from the object to a photographic plate or screen. (Author)

SOCIAL SCIENCES

USSR INDUSTRIAL DEVELOPMENT: SOVIET REGIONAL ECONOMY NO. 44. 10 June 63, 24p. JPRS: 19622.
Order from OTS $0.75 63-31017

Trans. from Ekonomicheskaya Gazeta (USSR) 1963, no. 19(92) p. 18-19; Stroitel'naya Gazeta (USSR) 1963, 12 Apr, p. 4; 4 Apr, p. 2; 1 May, p. 2; Izvestiya (USSR) 1963, 4 Apr; Rabochaya Gazeta (USSR) 1963, 30 Apr.

DESCRIPTORS: *Industrial production, *Economics, Management engineering, Oils, Refineries, Construction, Cements.

Contents:
Initial success in specialization, by N. Sobol'
Results of specialization
Construction management
Oil refinery construction job in Perm', by G. Popov
Construction progress across the nation
Cement production plan fulfillment
Specialization in economic planning, by O. Soich
Ukrainian economic development.

USSR INDUSTRIAL DEVELOPMENT: SOVIET REGIONAL ECONOMY NO. 46. 26 June 63 [20]p. JPRS: 19855.
Order from OTS $0.50 63-31110

Trans. of Sovety Deputatov Trudyaschikhsya (USSR) 1963, no. 5, p. 49-51; from Izvestiya (USSR) 1963, 18 May, 1 June, p. 3; Sovetskaya Moldaviya (USSR) 1963, 1 June, p. 2; Turkmenskaya Iskra (USSR) 1963, 2 June, p. 1; Ekonomicheskaya Gazeta (USSR) 1963, no. 22[95] p. 47.

DESCRIPTORS: *Industrial production, *Economics, Housing, Construction, Railroads, Conferences, Budgets, Public relations, Nuclear energy, Nuclear industrial applications.

Contents:
Housing construction in the Belorussian SSR, by A. Kanaev
Railroad for Ust'-Ilinskaya GES, by M. Markelov and I. Zhuravlev
Session of the party-state control committee of Moldavia
Production plan fulfillment in the Turkmen SSR, by M. Bakhmutova
Industrial advertisements
Peaceful use of atomic energy in industry, by I. Sinitsyn.

USSR INDUSTRIAL DEVELOPMENT: SOVIET REGIONAL ECONOMY NO. 47. 26 June 63 [20]p. JPRS: 19880.
Order from OTS $0.50 63-31129

Trans. from Ekonomicheskaya Gazeta (USSR) 1963, no. 18(91) p. 39, 43 and 3 articles pages not indicated.

DESCRIPTORS: *Industrial production, *Economics, Distribution, Consumption, Budgets, Industries, Management engineering.

Contents:
Problems concerning production and distribution of consumer goods, by B. Zolotov
Volga industry, by F. Kokh
Improving production in Nikolaev
Establishment of special administration in Belorussian sovnarkhoz called for, by A. Bakin and N. Kaptsevich
From handicrafts -- to full specialization of production, by K. Araslanov
Again complex production, by V. Libanov

USSR INDUSTRIAL DEVELOPMENT: SOVIET REGIONAL ECONOMY NO. 48. 26 June 63 [30]p. JPRS: 19883.
Order from OTS $0.75 63-31132

Trans. of Mekhanizatsiya i Avtomatizatsiya Proizvodstva (USSR) 1963 [v. 17] no. 4, p. 3, 27-32; Promyshlennost' Armenii (USSR) 1963 [v. 6] no. 2, p. 70-71; and 6 selected articles from 1963 issues of 6 Russian newspapers.

DESCRIPTORS: *Industrial production, *Economics, Employee fringe benefits, Automation, Bolts, Locking fastener devices, Screws, Display systems, Management engineering, Personnel management, Conferences, Construction, Awards, *Industrial equipment.

Contents:
Prizes awarded for new industrial techniques
Complete mechanization and automation in production of bolts, nuts and screws, by V. D. Lazarev and M. A. Tsal'
Exhibit of new equipment, by A. P. Aristov
Brief announcements and advertisements, by V. Lazarev and M. Danenberg
Lithuanian party-management activist conference
Four months industrial results in Moldavia
Bureaucratic bungling in Armenia, by A. Panchyan
Miscellaneous advertisements
Republic conference of construction men of the Ukraine.

Lyubchenko, I. S. and Maizlin, I. E.
A METHOD OF CONSTRUCTING AN ALGORITHM SIMULATING A CERTAIN PRODUCTION PROCESS. 10 June 63, 5p. 4 refs. JPRS: 19621.
Order from OTS $0.50 63-31016

Trans. of Akademiya Nauk SSSR. Doklady, 1963, v. 148, no. 3, p. 538-540.

DESCRIPTORS: *Algorithms, *Cybernetics, *Production, Simulation, Monte Carlo method, Economics.

Mikhailov, S.
ON THE NET COST AND PROFITABLENESS IN THE FISH INDUSTRY OF THE KAMCHATKA BASIN. [1962] 9p.
Order from OTS or SLA $1.10 63-15144

Trans. of Rybnoe Khozyaistvo (USSR) 1954 [v. 30] no. 9, p. 19-23.

DESCRIPTORS: *Fisheries, Fishes, Costs, Labor.

BOOK REVIEWS

The following book reviews can be ordered by number from OTS or SLA for $1.10 each. Each review includes, in addition to the material shown, a detailed statement of the coverage of the book and detailed table of contents.

BR-SOV/6233
Vul'f, Borris Konstantinovich, and Konstantin Platonovich Romadin
AIRCRAFT METAL SCIENCE (Aviatsionnoye metallovedeniye). 2d ed., rev. and enl. Moscow, Oborongiz, 1962. 503p. Errata slip inserted. 10,000 copies printed.

BR-SOV/6234
Karetnikov, D. V. and others
LINEAR ION ACCELERATORS (Lineynyye uskoriteli ionov). Moscow, Gosatomizdat, 1962. 207p. Errata slip inserted. 5000 copies printed.

BR-SOV/6237
Shal'nev, Viktor Grigor'yevich
DEVELOPMENT OF METHODS FOR THE PRESSURE WORKING OF METALS (Razvitiye metodov obrabotki metallov davleniyem). Moscow, Mashgiz, 1962. 618p. 4500 copies printed.

BR-SOV/6238
Ilzinya, Ilze Gustavovna
PROGRAMMING FOR TWO-ADDRESS ELECTRONIC DIGITAL COMPUTERS (Programmirovaniye dlya dvukhadresnykh tsifrovykh vychislitel'nykh mashin). Riga, Izd-vo AN LatSSR, 1962. 166p. Errata slip inserted. 4000 copies printed.

BR-SOV/6239
Luk'yanov, Pavel Izotovich and Aleksandr Georgiyevich Basistov
PYROLYSIS OF CRUDE OIL; RESOURCES OF PETROLEUM CHEMISTRY (Piroliz neftyanogo syr'ya; resursy neftekhimii). Moscow, Gostoptekhizdat, 1962. 273p. 2700 copies printed.

BR-SOV/6240
Kurzon, Ananiy Grigor'yevich and others
MARINE STEAM AND GAS TURBINES. V. 2: SYSTEMS AND DEVICES OF TURBINE UNITS (Sudovyye parovyye i gazovyye turbiny. tom. 2: Sistemy i ustroystva turboagregatov). Leningrad, Sudpromgiz, 1962. 419p. Errata slip inserted. 5000 copies printed.

BR-SOV/6241
Sluchevskiy, Boris Fedorovich
RADAR AND ITS APPLICATION (Radiolokatsiya i yeye primeneniye). Moscow, Vovenizdat, 1962. 258p.

BR-SOV/6242
Morozov, Georgiy Andreyevich
USE OF DIESEL FUELS CONTAINING ADDITIVES (Primeneniye dizel'nykh masel s prisadkami). Leningrad, Gostoptekhizdat, 1962. 112p. 3600 copies printed.

BR-POL/6243
Ciborowski, Stanislaw.
RADIATION CHEMISTRY OF INORGANIC COMPOUNDS (Chemia radiacyjna zwiazkow nieorganicznych). Warsaw, PWN, 1962. 290p. (Series: "Chemia wspolczesna", t.9) 2200 copies printed.

BR-RUM/6244
Lavruhina [Lavrukhina], A. K.
ACHIEVEMENTS IN NUCLEAR CHEMISTRY (Succesele chimiei nucleare). Bucharest, ED. Stiintifica, 1962. 144p. Errata slip inserted. 5100 copies printed.

BR-SOV/6245
Stramous, M. F.
SELECTED PLASTIC MATERIALS FOR SLIDE BEARINGS OF BUILDING MACHINERY (Vybor plasticheskikh mass dlya podshipnikov skol'zheniya stroitel'nykh mashin). Moscow, Mashgiz, 1962. 97p. 3500 copies printed.

BR-SOV/6246
Soveshchaniye po tseolitam. 1st, Leningrad, 1961.
SYNTHETIC ZEOLITES: PRODUCTION, INVESTIGATION, AND USE (Sinteticheskiye tseolity; polucheniye, issledovaniye i primeneniye). Moscow, Izd-vo AN SSSR, 1962. 286p. (Series: Its. Doklady) Errata slip inserted. 2500 copies printed.

BR-SOV/6247
Likhtman, Vladimir Iosifovich, and others
PHYSICOCHEMICAL MECHANICS OF METALS; ADSORPTION PHENOMENA IN PROCESSES OF METAL DEFORMATION AND FRACTURE (Fiziko-khimicheskaya mekhanika metallov; adsorbtsionnyye yavleniya v protsessakh deformatsii i razrusheniya metallov). Moscow, Izd-vo AN SSSR, 1962. 302p. Errata slip inserted. 7000 copies printed.

BR-SOV/6248
Piyatskiy, Vladimir Mikhaylovich
LADLELESS CASTING AND AUTOMATIC DOSING IN FOUNDRY WORK (Beskovshovaya zalivka i avtomaticheskaya dozirovka v liteynom proizvodstve). Moscow, Mashgiz, 1962. 174p. 4000 copies printed.

BR-SOV/6249
Brodskaya, Alla Georgiyevna
COMPRESSIBILITY OF FROZEN GROUNDS (Szhimayemost' merzlykh gruntov). Moscow, Izd-vo AN SSSR, 1962. 81p. 1500 copies printed.

TRANSLATIONS IN PROCESS

AGING AND STABILIZATION OF POLYMERS.
Mono. Starenie i staboilizatsiya polimerov, Moscow, 1963.
To be published by CB in 1964.

CATALOG OF COLLECTION CULTURES OF MICROORGANISMS IN THE USSR.
Mono. Katalog Kollektsioniykh Mikroorganizmov SSSR, Moscow, 1963.
To be published by CB in 1964.

COMMITTEE OF INVESTIGATION OF THE MALPESSET DAM. FINAL REPORT, VOLS. I-IV.
PL-480 mono. Commission d'Enquete du Barrage de Malpasset. Rapport Definitif, v. 1-4, Paris, 1960, 258p.
Tome I, Memoire, Aug. 60, 55p.
Tome II, Annexe 1-38, 41, Aug. 60, 135p.
Tome III, Annexe 39, Aug. 60, 32p. (23 maps)
Tome IV, Annexe 40, Aug. 60, 36p.

ELECTROCHEMISTRY.
Mono. Elektrokhimiya. Sbornik Statei, Moscow, 1963.
To be published by CB in 1964.

NEW METHODS OF PREPARING FUELS AND ORES AND THE METALLURGICAL TREATMENT OF THESE MATERIALS (Novye Metody Podgotovki Topliviykh-Rudiykh Materiallov i Ikh Metallurgicheskaya).
[Akademiya Nauk SSSR]. Institut Goryuchikh Iskopaemykh. Trudy, 1963, v. 22.
To be published by CB in 1964.

[NUCLEONICS] 1963 [VOL. 8]
Simultaneous publication in English PL-480 of Nukleonika (Poland) 1963 [v. 8].

POLISH MEDICAL JOURNAL, 1963.
PL-480 trans. of selected papers by Polish scientists published in various journals.

RADIOBIOLOGY, 1963, VOL. 3, NOS. 1-2.
Radiobiologiya (USSR) 1963, v. 3, no. 1, p. 3-147; no. 2, p. 153-326.

THERMOELECTRIC PROPERTIES OF SEMICONDUCTORS.
Mono. Termoelektricheskie Svoistva Polupovodnikov. Trudy Vtorogo Soveschchaniya po Termoelektrichestvy, Moscow, 1962.
To be published by CB in 1964.

Al'pert, Ya. L and others.
THE EFFECTS IN THE VICINITY OF A BODY MOVING THROUGH RAREIFIED PLASMA.
Mono. Ob Effektakh v Okrestnostyakh Dvizhushchegosya v Razrezhennoi Plasme Tela, Moscow, 1963.
To be published by CB in 1964.

Azhgirei, L. S. and Nurushev, S. B.
THE REAL PART OF THE ELASTIC p-p FORWARD SCATTERING AMPLITUDE.
[Joint] [Institute for] Nuclear] Research] (USSR) no. P-1188, 1963.

Balandin, A.
MULTIPLET THEORY OF CATALYSIS.
Mono. Mul'tipletnaya Teoriya Kataliza, Moscow, 1963.
To be published by CB in 1964.

Bordovskii, O.K.
ACCUMULATION AND TRANSFORMATION OF ORGANIC SUBSTANCES IN MARINE SEDIMENTS.
Mono. Nakoplenie i Preobrazovanie Organicheskogo Veshchestva v Morskikh Osadkakh, Moscow, 1963.
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YIELDS OF SOME FRAGMENTS IN BOMBARDMENT OF HEAVY NUCLEI WITH MULTI-CHARGED IONS. II, FISION U^{238} BY NE^{22} IONS.
[Joint] [Institute for] Nuclear] Research] (USSR) no. P-1148.

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METHODS OF EVALUATING PREDICTED RESERVES OF OIL AND GAS.
Mono. Otsenkiprognoznykh Zapasov Nefti i Gaza, Moscow, 1963.
To be published by CB in 1964.

Fok, M. V.
INTRODUCTION TO THE KINETICS OF LUMINESCENCE OF CRYSTAL PHOSPHORS.
Mono. Vbedenie v Kinetiku Luminestsentsii Kristallofosforov, Moscow, 1963.
To be published by CB in 1964.

Fridkin, V. M.
PHYSICAL FOUNDATIONS OF THE ELECTRONOGRAPHIC PROCESS.
Mono. Fizicheskie Osnovy Elektronograficheskogo Protsessa, Moscow, 1963.
To be published by CB in 1964.

Gaevskaya, M. S.
THE BIOCHEMISTRY OF THE BRAIN DURING DEATH AND RESUSCITATION.
Mono. Biokhimiya Mosga pri Umuranii i Ozhivlenii Organizma, Moscow, 1963.
To be published by CB in 1964.

Goldanskii, V. I.
THE MOSSBAUER EFFECT AND ITS APPLICATION TO CHEMISTRY.
Mono. Rezonansnaya Gamma-Flyuorestsentsiya bez Otdachi (effekt Messbauera) i Ee Irimeniniya v Khimii, Moscow, 1963.
To be published by CB in 1964.

Gribov, A. A.
CALCULATION OF INTENSITIES AND POLARIZATIONS IN THE INFRARED SPECTRA OF POLYATOMIC MOLECULES.
Mono. Intensivnosteii i Polyariatsii v Infrakrasnykh Spektrakh Mnogoatomnykh Molekul, Moscow, 1963.
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DEOXIDATION AND PINHOLE FORMATION IN LARGE CASTINGS.
Jernkontoret, Stockholm. Annaler (Sweden) 1963, v. 147, no. 4, p. 377-407.

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PHASE SHIFT ANALYSIS OF NUCLEON-NUCLEON SCATTERING AT ENERGY 147 MeV.
[Joint] [Institute for] Nuclear] Research] (USSR) no. P-1206, 1963.

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ELECTROPHORESIS OF COMPLEX COMPOUNDS. III. SEPARATION OF SEVERAL RARE ELEMENTS BY ELECYROPHORESIS ON PAPER IN AN NTA MEDIUM.
Joint Inst[itute] for Nuclear Research (USSR)no. P-1174.

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ESTIMATE OF THE MAXIMUM POSSIBLE LEAD CONTENT IN THE SOLAR ATMOSPHERE ACCORDING TO THE INFRARED LEAD LINE 7229 (Otsenka Verkhnei Granitsy Soderzhaniya Svintsa v Atmosfere Solntsa po Infrakrasnoi Linii Svintsa 7229).
PL-480 Akad[emiya] Nauk SSSR. Krymskaya Astrofiz [icheskaya] Observatoriya. Isvestiya, 1960, v. 22, p. 128-133.

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EXPERIMENTAL DETERMINATION OF OSCILLATOR STRENGTHS OF THE LINES OF LEAD BY THE ABSORPTION METHOD (Eksperimental'noe Opredelenie Sil Ostsillyatorov Linii Svintsa Metodom Pogloshcheniya).
PL-480 Akad[emiya] Nauk SSSR. Krymskaya Astrofizicheskaya Observatoriya, 1960, v. 22, p. 118-127.

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RADIO-FREQUENCY MOLECULAR GENERATORS AND AMPLIFIERS.
Russian mono. Molekulyarnye Generatory i Usiliteli Radiochastot, n. p., 1963.

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INFLUENCE OF OPEN CHAMBER WALLS ON THE WORK OF THE HYDROTURBINE (Wplyw Scianek Komory Otwartej na Prace Trubiny Wodnej).
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THE MICROHARDNESS OF MINERALS.
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To be published by CB in 1964.

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TRANSPORTATION OF RADIOACTIVE MATERIALS.
Mono. Transportirovanie Radioaktivnykh Veshchestv, Moscow, 1962, 195p.

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THE BIOCHEMICAL METHODS OF PROSPECTING FOR ORE DEPOSITS.
Mono. Biogeokhimicheskii Metod Poiskov Rudiykh Mestorozkdenii (Printsin i Prakrika Poiskov) Moscow, 1963.
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THE DETERMINATION OF THE RELATIVE G.F. VALUES FOR NICKEL BY THE EMISSION METHOD (Opredelenie Otnositel'nykh Chisel gf Nikelya po Liniyam Izlucheniya).
PL-480 Astronomicheskaya Observatoriya, Pulkovo. Izvestiya (USSR) 1960, v. 21, no. (?) p. 185-189.

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ASOTUS MOKRZECKII, NEW POLISH SPECIES DESCRIBED WITH ECOLOGICAL OBSERVATIONS.
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UPON THE GENERA OPHIONEURUS RATZ. AND LATHROMERELLA GIRAULT.
PL-480 Polskie Pismo Entomologiczne, 1927, v. 6, p. 100-102.

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TABLES OF THERMODYNAMIC VALUES OF C, N, O, AND Ar IN THE ATOMIC AND IONIZED STATES OVER THE TEMPERATURE RANGE OF 200-20,000°K AT PRESSURES OF 10^{-6} – 10^{-3} ATMOSPHERES.
Russian Mono. Tablitsy Termodinanicheskikh Yelichin C, N, O, Ar v Atomarnom i Ionizovannom Sostoyaniyakh v intervale Temperatur 200 - 20000°K i Davlenii 10^{-6} – 10^{-3} Atmosfer, n.p., n.d.
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DETERMINATION OF THE EXCHANGEABLE IONS IN SOIL BY AID OF A FLAME-PHOTOMETER (Oznaczanie Jonow Symiennych Gruntu Przy Pomocy Fotometru Ptomienicwego).
PL-480 Rosprawy Hydrotechniczne (Poland) 1959, no.5, p. 91-106.

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DETERMINATION OF THE COMPOSITION OF SANDS FROM THE AIR BY THEIR SPECTRAL BRIGHTNESS.
Mono. Opredelenie Tipovogo Sostava Peschanykh Otolozhenii s Vozdukha po Ikh Spektral'noi Yarkosti, Leningrad, 1962.
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Mono. Tugoplavkie Soedineniya, Moscow, 1963.
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